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The Main Determinants of Inflation in Albania

Ilker Domac
Carlos Elbirt

This study of inflation in Albania yields several conclusions:

- Fighting inflation and keeping exports competitive requires cuts in the budget deficit and credit to government.
- The strong seasonal inflation can be somewhat ameliorated by improving infrastructure and customs services.
- Structural reforms and improved infrastructure should be part of all stabilization programs, because growth helps reduce inflation.

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Summary findings

Domac and Elbirt investigate the behavior and determinants of inflation in Albana, using three approaches. They

- Decompose inflation into four components: seasonal, cyclical, trend, and random.
- Rely on the widely used Granger causality test, using disaggregated data on both the consumer price index (CPI) and key economic variables.
- Apply cointegration and error-correction techniques to the process of inflation, using a simple theoretical model.

Using the first approach, they conclude that inflation exhibits strong seasonal patterns associated with agriculture seasonality. Peaks and troughs of monetary aggregates correspond to those of inflation, with a two-month lag. The exchange rate also exhibits stable seasonality, reaching its trough in August and tending to depreciate early in the year.

The Granger causality test shows M1 (currency in circulation plus demand deposits) and the exchange rate to have predictive content for most items of the CPI. The empirical findings also indicate that credit to government is a good predictor of medical care, transportation, and communication prices. But causality also runs from the prices of bread and cereals, recreation, education, and culture to credit to government, since these items, at least during the period under consideration, are subsidized and contribute to the budget deficit. And causality runs from credit to government to the price of nontradables, highlighting the fact that an increase in the fiscal deficit would undermine Albania's competitiveness by producing appreciation in the real exchange rate.

The results of cointegration and error-correction techniques confirm that, in the long run, inflation is positively related to both money supply and the exchange rate, and negatively related to real income. A 1-percent increase in M1, for example, will raise inflation by 0.41 percent; a 1-percent depreciation of the exchange rate will increase inflation by 0.17 percent; whereas a 1-percent increase in real income will reduce inflation by 0.25 percent. Inflation adjusts to its equilibrium value fairly rapidly — 25 percent a month. The impact of the exchange rate on inflation occurs a month later, while the impact of real income and money take place two and four months later, respectively.

The findings support the conventional elements of a typical stabilization program. Fighting inflation and keeping exports competitive requires reducing both the budget deficit and credit to government. The strong seasonal nature of inflation can be somewhat ameliorated by improving infrastructure and customs services. Structural reforms and improvements in infrastructure should be part of any stabilization program because economic growth contributes to containing inflation.

This paper — a joint product of the Albania/Croatia Country Unit, Europe and Central Asia Region, and the Poverty Reduction and Economic Management Sector Unit, East Asia and Pacific Region — is part of a larger effort in the Bank to enhance the knowledge on the inflationary process and its practical implications. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Fran Lewis, room MC8-168, telephone 202-458-2979, fax 202-522-1784, Internet address flewis@worldbank.org. The authors may be contacted at idomac@worldbank.org and celbirt. June 1998. (39 pages)

THE MAIN DETERMINANTS OF INFLATION IN ALBANIA

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I. INTRODUCTION

In 1995, Albania, with 6 percent inflation and 13.3 percent economic growth, had the second lowest inflation after Croatia, and the highest economic growth among all the transition economies. The positive macroeconomic developments of 1993 to 1995 were, however, reversed in 1996 -- largely because of lax financial polices, slow progress on structural reforms, and a weak institutional system. Moreover, the collapse of the ponzi (pyramid) schemes and the subsequent civil disorder in early 1997 led to a further deterioration of macroeconomic conditions. As a result, the inflation rate increased from a single digit, 5 percent, in 1995 to 17.4 percent in 1996; as of September 1997, inflation rose further to 31.6 percent (year-on-year basis).

The importance and benefits of price stability[1] provides rare agreement among economists: it is widely accepted that economies perform better in terms of growth, employment and living standards in a low, rather than high, inflation environment. Given the importance of low inflation for both improved resource allocation and financial stability, this paper aims at investigating the inflation process in Albania. By thoroughly analyzing the country's inflation pattern, this study intends to contribute to policy makers' efforts in achieving and maintaining macroeconomic stability.

The present paper employs three different methodologies. The first one decomposes inflation into four components: *seasonal*, *cyclical*, *trend*, and *random*. The second approach relies on the widely employed Granger-causality test by using disaggregated

[1] It could be said that price stability (or low inflation) is achieved when inflation is reduced to a point where it is no longer a relevant factor in economic decision making.

data on both the consumer price index (CPI) and key macroeconomic variables in order to investigate the direction of causality and the information content of the key economic variables. Finally, the third approach applies co-integration and error-correction techniques to the inflation process -- a process which is outlined by a simple theoretical model. The paper concludes by highlighting the main policy implications of our empirical findings.

II. COMPOSITION AND THE STRUCTURE OF THE CPI

Albania's consumer price index covers 221 products, and the weight of each product is derived from the 1993 expenditure survey involving 3,000 families in the Tirana area. Table 1 shows the components and weights of the CPI. As seen in Table 1, foods, beverages and tobacco represent 72 percent of the consumption basket, with bread and cereals alone accounting for over 15 percent of the total. Three main factors affecting food prices dictate the behavior of the CPI, and these include: the exchange rate (owing to the high import content of foodstuffs), domestic inputs, and weather conditions.

Table 1. Consumer Price Index Basket

	Weight	Coefficient of Variation[a] 1992.01-1997.09	Coefficient of Variation 1993.01-1997.09
Total of all items	1.0000	2.95	1.75
Food, beverages, and tobacco	0.7239	2.41	2.31
Bread and cereals	0.1547	5.16	3.98
Meat, poultry, and fish	0.1328	3.43	1.77
Dairy products and eggs	0.1299	3.72	2.98
Oils and fats	0.0715	4.61	2.51
Fruits and vegetables	0.1495	2.62	4.81
Sugar, coffee, and tea	0.0402	3.13	3.52
Beverages at home	0.0198	1.92	2.07
Food and beverages away from home	0.0088	1.50	1.08
Tobacco	0.0167	1.93	2.44
Clothing and footwear	0.0282	1.41	1.04
Rent, water, fuel, and power	0.0641	3.06	3.63
Household goods	0.0827	2.18	2.70
Medical care	0.0092	5.30	2.69
Transportation and communication	0.0516	3.02	3.43
Recreation, education, and culture	0.0357	1.69	1.98
Personal care	0.0046	1.39	1.35

Source: INSTAT

Note: (a) Coefficient of variation is defined accordingly - the ratio of standard deviation of the monthly inflation of the each item to its respective mean.

As can be seen in Table 1, bread and cereals, medical care, and oils and fats were the most volatile items throughout the entire sample period -- due mainly to liberalization of many administered prices in 1992.[2] However, as one would expect owing to seasonal patterns, during 1993.01 - 1997.09, fruits and vegetables had been the most volatile item followed by: bread and cereals; rent, water, fuel, and power; sugar, coffee and tea; and transportation and communication.

[2] In particular, the price of bread, which had been unchanged for more than 40 years, was increased by 385 percent.

III. THE EVOLUTION OF INFLATION DURING 1993-1997

As a result of the wide-ranging price liberalization of August 1992, the inflation rate reached its historical peak of 236 percent at the end of that year. Following the introduction of the stabilization program in the second part of 1993, however, the rate of inflation has declined steadily. Indeed, inflation declined noticeably between 1993 and 1995 as a result of tight financial polices and stable (even appreciating) exchange rates along with strong economic growth.

Table 2 shown below, depicts some of the key variables which are expected to influence the inflationary process in Albania.

Table 2. Key Variables Influencing Inflation (in %)

	Inflation (e.o.p.)	Budget Deficit[a]	Exchange Rate Depr.[b]	MB Growth	M2 Growth	M3 Growth	RER Depr.[c]	Real GDP Growth
1993	30.9	9.3	-1.0	-	83.0	75.0	-23.7	9.6
1994	15.8	7.1	-3.0	37.1	41.0	40.5	-14.0	8.3
1995	6.0	7.2	-0.8	28.1	50.0	52.0	-3.4	13.3
1996	17.4	10.2	8.4	14.0	42.3	44.0	-5.4	9.1
1997[d]	31.6	-	37.1	38.4	40.4	33.8	3.7	-

Source: Ministry of Finance, Bank of Albania, and the IMF's International Financial Statistics.

Notes: (a) Domestically financed deficit as a % of GDP. As of September 1997, the budget deficit was 40 % higher than the corresponding period of 1996. (b) Year-on-year depreciation against USD and minus sign indicates appreciation. (c) The real exchange rate defined as the ratio of the exchange rate against the USD times the US Whole Sale Price Index (WPI) to Albanian CPI, and minus sign indicates real appreciation. (d) Figures for 1997 are as of September and represent percentage changes from September 1996 to September 1997.

A careful look at Table 2 reveals the unique combination of strong economic growth and low inflation that the country enjoyed during 1994 and 1995; interestingly, strong growth and low inflation took place in the presence of high monetary growth and high fiscal deficits. This phenomenon can be attributed to three factors. First, vigorous economic growth can, to a large extent, be explained by the convergence hypothesis,

which basically argues that poor economies grow faster on average than rich economies. Second, high monetary growth during this period largely reflected "*re-monetization*", which depends positively on real output and negatively on inflation. Third, the inclination of private individuals in Albania to hold large amount of base money enabled the Government to collect large volumes of seignorage at relatively low rates of inflation.[3] In other words, the presence of a high ratio of high-powered money to GDP implies a lower inflation rate for a given deficit.

The downward trend in inflation did not resume in 1996 and 1997: the inflation rate increased to 17.4 percent in 1996 and to 31.6 percent in September 1997 (year-on-year basis). An escalating budget deficit, a relative slow-down in economic growth, and the exchange rate depreciation were the chief factors leading to an increase in the rate of inflation in 1996. Further deterioration of the fiscal deficit, the collapse of the ponzi (pyramid) schemes, which triggered civil disorder, and the subsequent contraction of output along with the sharp depreciation of the exchange rate -- all contributed to the 31.6 percent inflation rate at the end of September 1997.

[3] The inflation required to finance a fiscal deficit is equal to a fraction κ of gross domestic product (GDP) and can be expressed as:

$$\pi = \frac{\kappa}{\psi}$$

where π is the rate of inflation tax required to finance the fiscal deficit, and ψ is the ratio of high-powered money to GDP.

IV. DECOMPOSITION OF THE CPI INTO ITS UNOBSERVED COMPONENTS: TREND SEASONAL, CYCLICAL, AND RANDOM.

In this section, we attempt to decompose inflation (measured by changes in the CPI) into subpatterns that identify each component of the inflation separately. Such a decomposition will shed more light on the behavior of the CPI. Performing a univariate decomposition of the series into their unobserved components can be done in many ways and there is no particular model with proven superior performance. Here we will employ a simple method often used by practitioners; the general mathematical representation of the decomposition approach can be written as:

$$p_t = f(S_t, T_t, C_t, R_t) \qquad (1)$$

where

p_t = CPI inflation[4] at period t
S_t = seasonal component at period t
T_t = trend component at period t
C_t = cyclical component at period t
R_t = random component (or error) at period t

The trend component represents the long-run behavior of the variable of interest, while the cyclical component represents the ups and downs caused by specific events. The seasonal component reflects periodic fluctuations of constant length and proportional depth that are caused by such things as rain, the month of the year, the timing of holidays, etc. The distinction between seasonality and cyclicality is that seasonality repeats itself at

[4] Inflation is computed as the change in the natural log of the CPI.

fixed intervals (such as month or week), whereas cyclical factors have a longer duration that varies from cycle to cycle. Finally, the random component reflects erratic fluctuations with no pattern, or totally unexplainable variations.

Practically all time series consist of seasonality and cycle and can be expressed proportional to the trend. The multiplicative form is the most commonly used functional relationship to relate these four subpatterns. It can be expressed as:

$$p_t = S_t * T_t * C_t * R_t \qquad (2)$$

where p represents the actual observed values of the inflation. The purpose of decomposition is to identify T, C, and S (whatever remains will be R) by analyzing the original data p. First, seasonality and randomness are eliminated by adding as many values of p as the lag length of seasonality (12 months when seasonality is monthly). More specifically, this can be done by calculating moving average values and can be specified as:

$$MA = T*C \qquad (3)$$

where MA is a moving average from the beginning to the end of the data. The ratio of p to MA will yield:

$$\frac{p}{MA} = \frac{T*C*S*R}{T*C} = S*R \qquad (4)$$

which will contain only seasonality and error or randomness. (By convention, these values have been multiplied by 100). These ratios contain information needed in identifying the seasonality. If the value of a single ratio is above 100, it implies that actual value p is larger than the moving average, T*C. Since p includes seasonality and randomness, and since T*C does not, seasonality and randomness are higher for this month than the average. If the ratio is below 100, the opposite holds true: seasonality and randomness are less than the average.

Figure 1 and 2 present the behavior of monthly inflation and the performed decomposition of the monthly inflation rate. The trend component has declined steadily until July 1995 -- owing to tight financial polices and strong economic growth. It has increased thereafter as a result of both fiscal slippage as well as the previously mentioned factors.[5] Inflation in Albania exhibits strong seasonal patterns, peaking in February and reaching its through in July. This seasonality can be associated with agricultural production, which reaches its peak in the summer (July in particular), and its through during the winter months. This confirms the fact that the marked seasonality of prices in Albania could be due, to a large extent, to agricultural seasonality.[6]

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[5] The trend is computed by using the Hodrick and Prescott (HP) filter, whose main attractiveness lies in its flexibility, simplicity, and reproducibility. The HP filter defines a trend τ for series z as the solution to the problem:

$$\min \sum_{t=1}^{T} (z_t - \tau_t)^2 + \lambda \sum_{t=2}^{T-1} [(\tau_{t+1} - \tau_t) - (\tau_t - \tau_t)]^2$$

where the parameter λ represents the choice between smoothness of the trend ($\lambda=\infty$), that is, a linear trend versus perfect fit of the trend ($\lambda=0$), that is, the trend replicates the series. As suggested by Hodrick and Prescott, the benchmark value in the case of monthly data for λ is 14,400.

[6] Policy makers spend time, effort and resources to identify measures to ameliorate price increases in the

As can be seen from Figure 2, the random component of inflation is mainly positive and high between June 1995 and July 1996. This suggests that there was perhaps a break in the trend of the series one that the model failed to capture.[7] The decreasing trend was reversed around June 1995 and, thereafter, the trend has been increasing.[8]

As was previously indicated, money and exchange rates have a tremendous impact on the inflation process in Albania. In order to improve our understanding of both the behavior of the exchange rate and monetary aggregates, as well as the possible channels by which they may affect the different components of inflation, we have also decomposed these series into the same four components. For the analysis of monetary aggregates, we have examined three definitions of monetary aggregates: M1, M2, and M3.

Figure 3 illustrates the seasonal components of the variables in question. It is interesting to observe that all monetary aggregates peak in **December** owing to the fiscal deficit, which balloons during the final month of the year. M1 and M3 definitions reach their through in **May**, while M2 reaches its through in **November**. It should be noted that, in all cases, peaks of the monetary aggregates correspond to those of inflation with a lag of two months. Moreover, in the case of M1 and M3, troughs correspond with those

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winter (the strategic reserve policies provide one example). However, the seasonality, as associated with movement in agricultural production, can effectively be reduced by intelligent stock and import strategies. In trying to take advantage of market conditions, it has been proven that the private sector follows precisely these intelligent strategies. Moreover, improved infrastructure (roads, airports, ports, etc.) and the removal of institutional bottlenecks (long delays at customs, administrative restriction to imports, etc.) are also crucial to alleviate seasonal peaks.

[7] Political expectations deteriorated during this period as result of the electorate's rejection of the proposed Constitution and, subsequently, highly disputed parliamentary elections.

[8] It is interesting to note that the random component does not seem to be noticeably affected by the anarchy that took place in early 1997.

of inflation with a two month lag.

Finally, the exchange rate also presents a stable seasonality, reaching its through in **August** and showing a tendency to depreciate during the first part of the year. Interestingly, the model is able to capture seasonal through during the summer time, **August** in particular. At this time, workers' remittances are high and perhaps the demand for foreign currency drops as a result of the decline in food imports owing to high agriculture production during the summer time.

Figure 1. Monthly Inflation in Albania

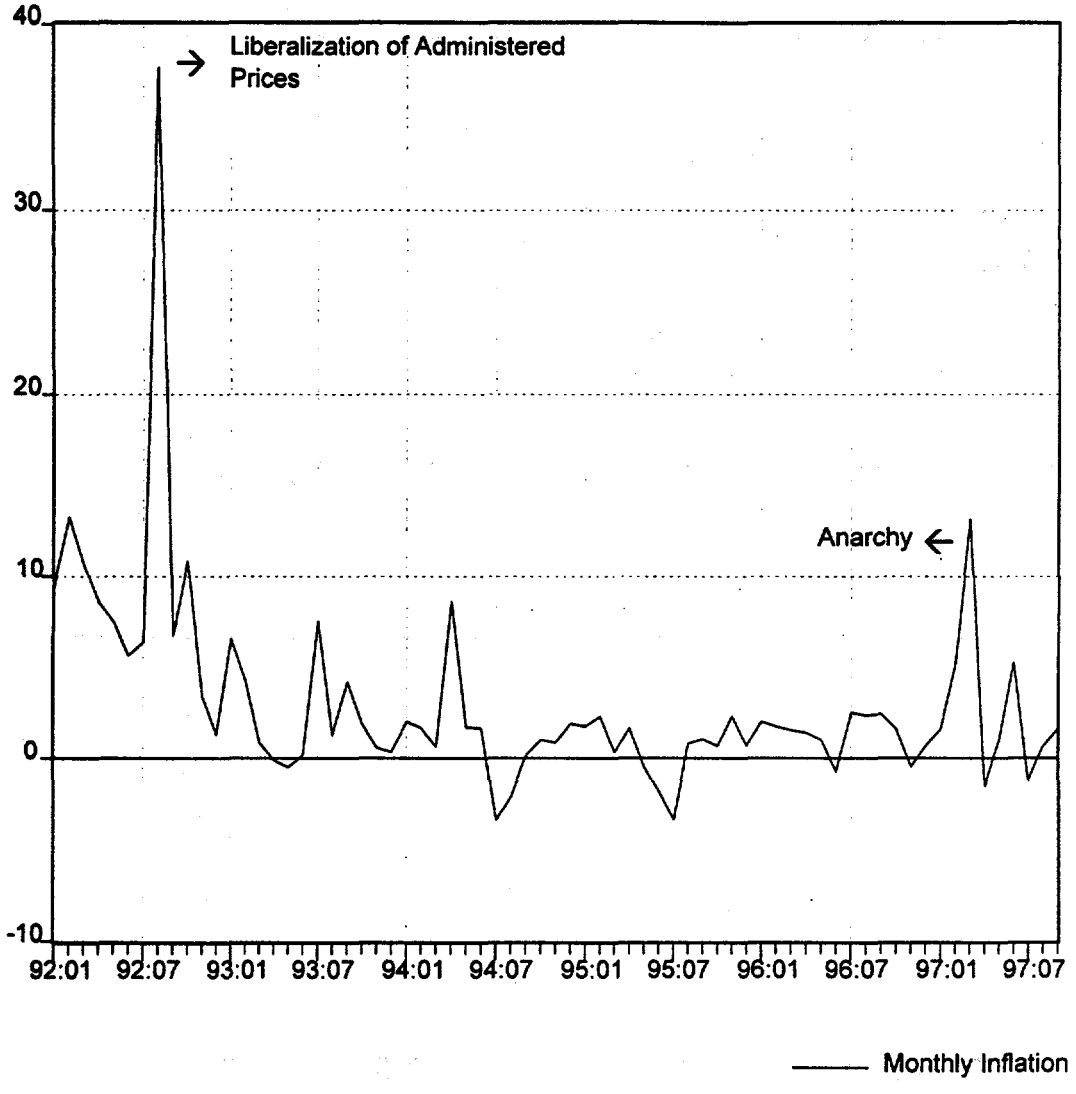
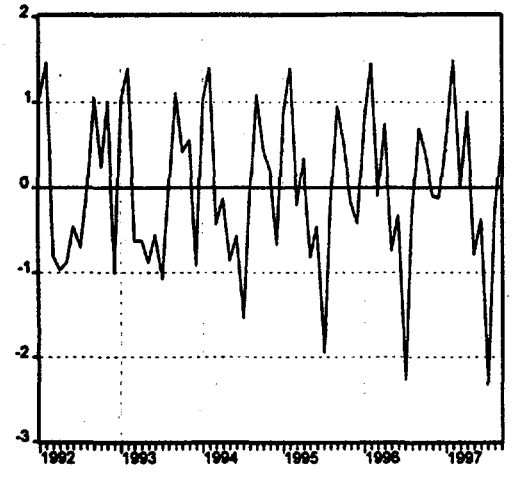
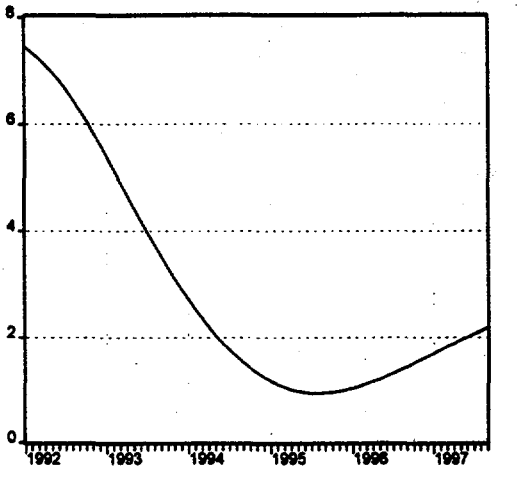
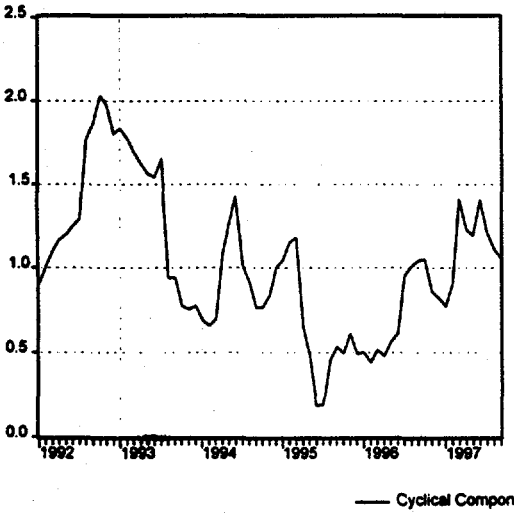


Figure 2. Decomposition of Monthly Changes in the CPI







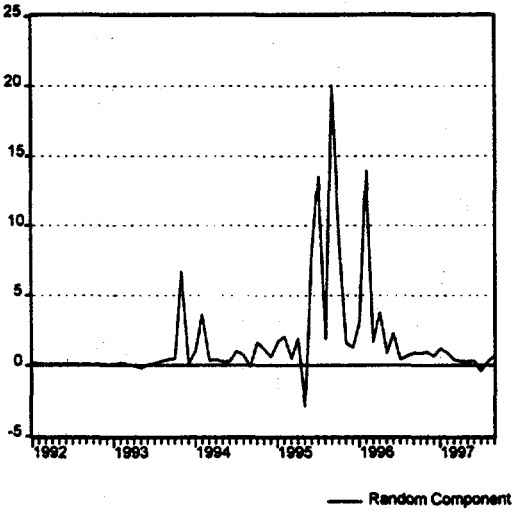
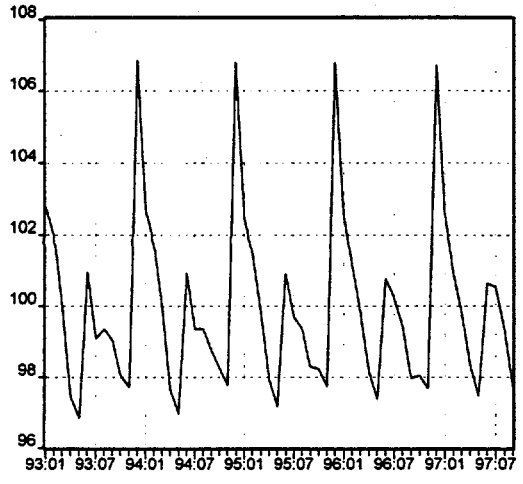
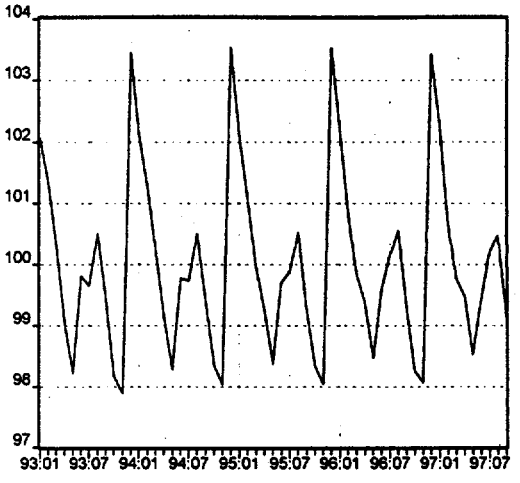
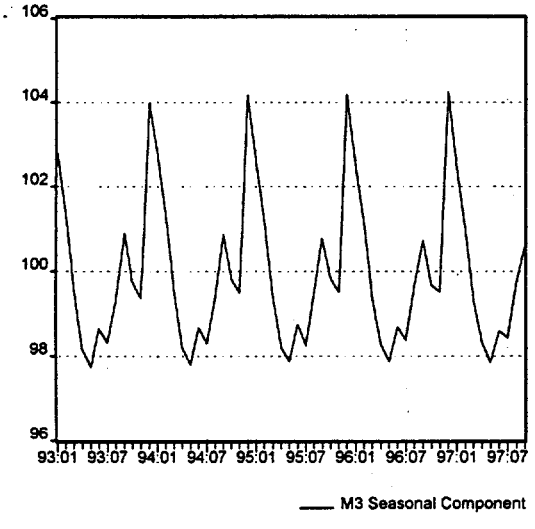
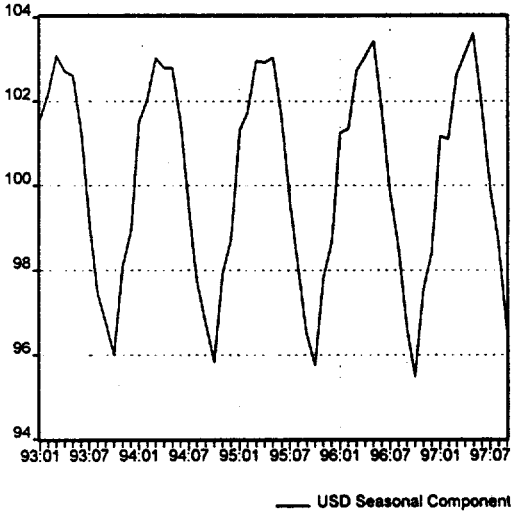


Figure 3. Monetary and Exchange Rate Seasonal Factors









V. LEADING INDICATORS OF INFLATION IN ALBANIA

Following the approach employed by Friedman and Kuttner (1993) and others, we investigate the information content of economic variables for inflation by using Granger causality tests. This technique helps identify variables that provide significant information for predicting the future course of inflation and this, in turn, will provide valuable information for policy makers in designing economic policies.

Unlike most previous studies, we will investigate the directional relationship between 16 individual components of the CPI, presented in Table 1, and the key economic variables. More specifically, we regress inflation in the individual component of the CPI on both past values of itself and past values of (a measure of) a financial or monetary indicator. If the financial or monetary indicator is statistically significant in this regression, then it provides information about future inflation over and above that provided by past values of inflation.[9]

First, we start with a series of bivariate Granger causality tests, where the estimated equations are of the form:

$$X_t = \eta + \sum_{i=1}^{m} \delta_i X_{t-i} + \sum_{i=1}^{m} \mu_i Y_{t-i} + \nu_t \qquad (4)$$

[9] Toda and Phillips (1994) conducted a comparative simulation study of the small sample properties of Granger causality tests in levels, differences, and in an error correction model for co-integrated systems. Their findings demonstrate that in small samples (less than 100), Granger causality tests that explicitly take co-integration into account could not outperform the conventional tests in level and first differences, despite the absence of the usual asymptotic distributions. Accordingly, based on their conclusion one can have confidence in the results of Granger causality tests even if the variables in question are co-integrated.

X represents the particular individual component of the CPI. Y is an element in the set of indicator variables, which for this exercise includes the monetary base (MB); M1; M2; M3; credit to government (CRG); the Lek/US dollar exchange rate (USD); the Lek/Italian Lira exchange rate (ITL); the Lek/German Mark exchange rate (DM), and the Lek/Greek Drachma exchange rate (GRD).

In the sample, we use monthly data from January 1993 to September 1997. Since we found the variables involved to be integrated of order one, that is stationary in first differences, we have expressed them in first differences. We compute F-tests for the null hypothesis of the non-Granger causality of the relevant indicator variable and calculate the marginal significance levels (*p-values*) for the bivariate Granger causality tests for lag lengths of 1 to 12. The smaller these values, the stronger the predictive content of the relevant indicator for the particular measure of inflation.

The tables in Appendix 2 present the overall results of this exercise. In this section, we report only the results of Granger Causality tests for tradable and non-tradable goods. The index of tradables excludes prices of public and personal services (food and beverages away from home; rent, water, fuel, and power; medical care; transportation and communication; recreation, education and culture; personal care).[10]

[10] The classification of what is tradable and what is non-tradable is not immutable. Nevertheless, loosely speaking goods included in agriculture, mining and manufacturing are typically the most tradable, while construction, services, and domestic transportation are typically the least.

Table 3. The Results of the Granger Causality Tests [X=Price of Tradables]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	**0.60%**	75.90%	**0.03%**	12.58%	24.02%	53.22%	26.96%	85.85%	99.85%	75.97%	14.38%	**0.79%**	31.88%	**1.17%**	15.37%	**0.83%**	15.31%	**1.79%**
2	**2.62%**	17.01%	**0.10%**	52.22%	43.84%	62.20%	19.40%	57.89%	91.41%	86.83%	10.89%	**0.09%**	38.12%	**2.88%**	16.26%	**1.39%**	16.00%	**1.52%**
3	8.45%	15.60%	**0.37%**	54.72%	50.84%	55.12%	25.19%	70.14%	97.73%	96.79%	16.59%	**0.30%**	17.89%	6.32%	23.92%	**3.72%**	32.16%	**3.14%**
4	12.09%	10.30%	**0.87%**	73.77%	69.52%	47.94%	6.87%	65.91%	95.21%	99.02%	27.59%	**0.43%**	30.06%	10.38%	41.00%	**4.51%**	57.99%	**4.07%**
5	17.72%	11.82%	**1.85%**	85.60%	82.03%	60.34%	14.22%	22.01%	95.90%	99.36%	27.03%	**0.31%**	40.31%	12.33%	58.89%	**3.78%**	75.65%	**4.32%**
6	21.10%	19.68%	**0.30%**	83.56%	65.17%	35.54%	25.97%	28.00%	69.57%	24.77%	29.06%	**0.26%**	29.27%	33.40%	62.79%	**4.05%**	88.97%	12.56%
7	9.12%	29.55%	**0.29%**	25.72%	56.84%	39.44%	16.56%	28.81%	63.85%	37.46%	39.58%	**0.40%**	31.29%	8.98%	47.86%	**0.36%**	87.96%	11.24%
8	16.94%	24.65%	**0.90%**	22.28%	68.81%	36.96%	20.36%	24.07%	59.14%	50.05%	44.17%	**0.41%**	8.69%	**3.06%**	9.94%	**0.05%**	81.90%	26.03%
9	6.62%	23.10%	**1.15%**	28.05%	75.10%	64.00%	32.51%	71.33%	57.72%	50.77%	55.48%	**0.77%**	10.03%	6.33%	8.48%	**0.52%**	14.47%	29.64%
10	12.50%	76.36%	**3.49%**	33.34%	61.89%	43.94%	36.52%	81.45%	72.65%	62.74%	36.57%	**1.73%**	27.70%	10.51%	25.53%	**1.80%**	37.68%	35.68%
11	5.54%	82.78%	9.12%	58.49%	46.93%	53.43%	31.55%	84.45%	81.37%	75.34%	5.05%	**0.68%**	19.48%	15.13%	40.21%	**1.80%**	24.20%	24.17%
12	9.46%	95.86%	7.06%	14.61%	65.30%	64.66%	35.50%	18.18%	92.87%	30.45%	5.94%	**2.13%**	22.60%	40.85%	58.61%	9.89%	28.37%	10.17%

Table 4. The Results of the Granger Causality Tests [X=Price of Non-tradables]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	77.14%	19.26%	86.54%	94.67%	92.95%	83.24%	84.45%	66.27%	70.18%	69.02%	98.37%	59.50%	94.18%	55.28%	97.53%	66.37%	66.59%	66.52%
2	91.80%	22.48%	51.63%	92.74%	54.39%	96.75%	75.23%	88.23%	64.07%	80.66%	99.20%	64.50%	83.33%	77.54%	57.03%	84.99%	85.39%	76.05%
3	41.44%	46.12%	53.12%	95.39%	14.61%	79.60%	17.34%	92.74%	**0.00%**	88.54%	99.12%	64.55%	49.59%	73.70%	28.97%	66.27%	91.47%	55.22%
4	37.18%	95.72%	69.99%	62.05%	25.18%	58.71%	30.37%	92.64%	**0.00%**	53.70%	86.88%	63.61%	35.19%	28.98%	25.03%	34.93%	87.05%	50.90%
5	66.63%	20.47%	70.14%	80.91%	38.11%	54.91%	41.58%	83.68%	**0.00%**	45.29%	92.00%	75.56%	41.45%	59.02%	35.93%	64.76%	95.45%	49.51%
6	56.21%	15.78%	73.07%	82.31%	10.42%	79.74%	20.39%	93.41%	**0.00%**	56.21%	82.45%	75.37%	37.60%	27.87%	30.13%	37.39%	98.16%	15.24%
7	67.89%	21.72%	32.54%	85.22%	**2.84%**	86.95%	10.11%	88.64%	**0.00%**	16.52%	47.85%	73.40%	31.65%	50.73%	28.23%	21.34%	98.93%	15.63%
8	49.52%	23.94%	48.39%	92.81%	**3.33%**	93.55%	23.58%	94.59%	**0.00%**	24.39%	58.37%	70.00%	23.39%	66.05%	12.77%	14.54%	43.48%	12.14%
9	38.02%	5.72%	18.16%	54.75%	**0.15%**	59.57%	26.42%	70.77%	**0.00%**	25.61%	68.66%	75.77%	22.23%	56.65%	12.74%	10.62%	35.31%	10.33%
10	60.05%	51.05%	23.15%	57.04%	**0.49%**	84.12%	31.21%	66.38%	**0.00%**	19.71%	76.94%	64.35%	25.53%	57.28%	14.86%	23.26%	21.55%	20.09%
11	42.14%	11.88%	35.14%	75.14%	**1.53%**	92.57%	32.75%	71.15%	**0.00%**	23.45%	83.70%	72.14%	52.78%	45.42%	43.48%	16.34%	44.60%	5.10%
12	44.83%	38.95%	43.70%	70.04%	**0.67%**	72.25%	28.07%	61.32%	**0.00%**	**0.01%**	94.43%	21.67%	73.79%	41.52%	50.55%	39.07%	34.28%	13.99%

The results reported in Table 3 indicate that there is a one-way causality running from high liquid money (M1) to tradable goods. In addition, the findings show that causality runs from the price of tradables to the exchange rate, the USD and Greek Drachma in particular. This finding might be explained by the rapid flow of information on foreign prices obtained in the local market from the main trading partners. This, in turn, is reflected almost simultaneously in the exchange rate.

In the case of non-tradables, there is strong evidence that causality runs from credit to government to the price of non-tradables. This finding has an important policy implication: an increase in credit to government, as a result of the fiscal deficit, will lead to an increase in the price of non-tradables. This, in turn, will produce an appreciation in the real exchange rate, thereby reducing the country's export competitiveness. The empirical evidence also highlights that the M2 definition of money supply has predictive

power on the price of non-tradable goods.

The overall results, reported in Appendix 2, underscore that both high liquid money (M1), more than the broader definitions, and the exchange rate have an important predictive content for almost all the individual items of the CPI. The findings also suggest that credit to government is a good predictor of both the medical care component, as well as the transportation and communication components of the CPI.

There appears to be a bi-directional causality between credit to government and the rent, water, fuel, and power component of the CPI. Since these goods and services are provided by both the private and public sector and, when publicly provided, they contribute to the budget deficit, the finding of bi-directional causality is to be expected. The results further indicate that, in the case of bread and cereals, recreation, education and culture, there is strong evidence that causality runs from these items to credit to government. This may be explained by government subsidies for these items -- subsidies that need to be increased every time prices rise, leading to additional need for credit to the Government.[11]

VI. A SIMPLE THEORETICAL MODEL OF INFLATION DETERMINATION AND ITS APPLICATION TO ALBANIA

In previous sections, we examined both the univariate properties of the series and the predictive power of key economic variables; the next step is to investigate them within a macroeconomic model. This section derives a simple theoretical model of

[11] It should be pointed out that the subsidies provided to most of these items have been declining steadily.

inflation determination in order to analyze the impact of the different variables on inflation.

The general price level can be expressed as a weighted average of the price of tradable goods and (P^T) and non-tradable goods (P^N):

$$\log P_t = \theta (\log P^N) + (1-\theta)(\log P^T) \quad (5)$$

where $0<\theta<1$.

The price of tradable goods is determined in the world market and depends on foreign price (P^f) and on the exchange rate (e). In domestic currency terms, P^T can be depicted by the following expression:

$$\log P^T = \log e_t + P_t^f \quad (6)$$

As can be seen from (6), both an increase in the exchange rate and a rise in foreign prices will lead to an increase in domestic prices.

The price of non-tradable goods is assumed to be determined in the domestic money market, where it is assumed that demand for non-tradable goods moves in line with the overall demand in the economy. Accordingly, the price of non-tradable goods is determined by the money market equilibrium condition, where real money supply (M^s/P) equals real money demand (m^d):

$$\log P_t^N = \beta(\log M_t^s - \log m_t^d) \qquad (7)$$

where β is a scale factor illustrating the relationship between economy-wide demand and demand for non-tradable goods. It is assumed that the demand for real balances is a function of real income and inflationary expectations. Due to relatively undeveloped financial markets in Albania, it is assumed that the relevant substitution is between goods and money, and not among different financial assets. Consequently, the opportunity cost of substitution between goods and money is the expected inflation rate.

$$m_t^d = f(y_t, \pi_t^e) \qquad (8)$$

The expected rate of inflation is assumed to be determined by the inflation in the previous period:

$$\pi_t^e = \Delta \log P_{t-1} \qquad (9)$$

The theory predicts that an increase in real income will lead to an increase in money demand, while an increase in expected inflation will lead to a decrease in money demand.

Substituting and rearranging, we obtain the following estimable equation:

$$\log P_t = \alpha \log M_t + \phi \log y_t + \delta \Delta \log P_{t-1} + \upsilon \log e_t + \gamma \log P_t^f \qquad (10)$$

where the theory predicts that an increase in money supply, expected inflation, the exchange rate and foreign prices will all drive prices up, while an increase in real income will lead to a decline in the inflation rate. The effect of sluggish adjustment due to rigidities and inertia can be captured by adding the effect of lagged prices to the equation.

Tables 5, 6, and 7 present the results of the empirical counterpart to our theoretically derived equation by using monthly data for the period 1993:01-1997:09. Our empirical approach is divided into two parts. First, we employ Engle-Granger (1987) and Johansen and Julelius (1990) co-integration analyses in order to determine the existence of the long-run relationship between, P, e, y, and M.[12] It is widely believed that variables hypothesized to be linked by some theoretical economic relationship should not diverge from each other in the long-run. Although such variables may drift apart in the short-run, they converge toward an equilibrium in the long-run, thanks to disequlibrium forces. Co-integration is viewed as the statistical expression of the nature of such long-run equilibrium relationships.

The empirical results indicate that there is a long-run equilibrium relationship between P and e, y, and M. The findings also show that, in the long run, inflation in Albania is positively related to money supply, and the exchange rate (USD), while it is negatively related to real income, which is proxied by the power consumption (PC).[13]

[12]We have employed both the ADF test and Phillips-Perron test to investigate the time series properties of the variables involved. Considering the length of our sample, unit root testing with standard critical values could be misleading. Nonetheless, based on visual inspection and the results of these tests, it is safe to conclude that all the variables are integrated order of 1, I(1).

[13] As widely acknowledged, there is a close link between aggregate macroeconomic activity and power consumption in market economies (with an electricity-GDP elasticity close to unity). Dobozi and Pohl

More specifically, in the long-run a 1 percent increase in M1 will raise inflation by 0.41, while a 1 percent depreciation of the Lek will increase inflation by 0.17 percent On the other hand-- keeping with theory-- a 1 percent increase in real income will reduce inflation by 0.25 percent.

Second, in order to investigate the short-run dynamics, we turn to the estimates of the error-correction model, which is formulated as:

$$\Delta P_t = \varphi_0 + EC_{t-1} + \sum_{j=0}^{n} (\varphi_{ij} \Delta x_{t-j}) + \varepsilon_t \qquad (11)$$

where x_t is the vector of regressors, EC is the error-correction term, and the lag length n is determined by Hendry's General-to-Specific-Modeling (HGSM) strategy. We include 11 lags on each term and eliminate the lags whose coefficients are not statistically significant.[14] Table 7 summarizes the empirical results. Since the results of the *J-test* introduced by Davidson and Mackinnon (1981) favor the model including M1 over both M2 and M3, we only report estimation results using M1 definition of money stock.[15] The empirical evidence highlights that, as captured by the coefficient of the error-correction term (EC), inflation adjusts towards its equilibrium value fairly rapidly, that is

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(1995) argue that it is reasonable to assume that the energy intensity of real value added would not change significantly in transition economies. This is because, while a rise in overhead electricity use per unit of output would tend to increase absorption of electricity per unit of value added (due to declining capacity utilization and a fall in maintenance investment), higher electricity tariffs and shifts away from heavy industry would pull towards increased energy efficiency. As they suggest, until the quality of national income data improves, power consumption data can be used as a more reliable indicator of short-run economic activity.

[14] Longer lag specification was not possible due to the relatively short length of our sample.

25 percent per month. Due to the high frequency of the data, it is difficult to interpret each individual coefficient separately. Nevertheless, the results show that the impact of the exchange rate on inflation occurs quite rapidly, that is after a month, whereas the impact of real economic activity takes place two months later. On the other hand, money, as expected, affects inflation with a longer lag: four months later. These findings are to be expected: Albania is a small, open economy so the impact of the exchange rate on inflation should take place rapidly. The effect of real economic activity takes time to be reflected in prices. Finally, a lag of four months between money and inflation is quite consistent with the findings of other studies.

The model performs well in terms of its explanatory power, explaining over 80 percent of the total variations in inflation. It satisfies all the basic diagnostic tests. Furthermore, based on the results of the CUSUM test, the estimated regression is found to be stable over the period studied, confirming the structural stability of the model.

[15] This finding may reflect the fact that, in explaining inflation in Albania, the function of money as a medium of exchange is more relevant than its function as store of value.

Table 5. Results of Johansen Co-integration Test[16]

The Results of Johansen Co-integration Test for **P, M1,e, d, and PC**

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.6638	121.4077	68.5200	76.0700	None **
0.4715	66.9040	47.2100	54.4600	At most 1 **
0.4094	35.0207	29.6800	35.6500	At most 2 *
0.1596	8.6933	15.4100	20.0400	At most 3
0.0000	0.0000	3.7600	6.6500	At most 4

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 3 cointegrating equation(s) at 5% significance level

The Results of Johansen Co-integration Test for **P, M2, e, d, and PC**

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.7141	120.5715	68.5200	76.0700	None **
0.4440	57.9579	47.2100	54.4600	At most 1 **
0.3374	28.6079	29.6800	35.6500	At most 2
0.1483	8.0257	15.4100	20.0400	At most 3
0.0000	0.0000	3.7600	6.6500	At most 4

The Results of Johansen Co-integration Test for **P, M3, e, d, and PC**

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.6523	132.1822	68.5200	76.0700	None **
0.5840	79.3677	47.2100	54.4600	At most 1 **
0.4329	35.5199	29.6800	35.6500	At most 2 *
0.1334	7.1606	15.4100	20.0400	At most 3
0.0000	0.0000	3.7600	6.6500	At most 4

Note: d is a dummy variable included to capture the sharp increase in inflation in March 1997.

[16] See Ireland and Wren-Lewis (1992) for the discussion of a dummy variable in co-integration equations. They argue that since the dummy variable is not stochastic, it could be interpreted as modification to the intercept term.

Table 6. Engle-Granger Co-integration Results

Variable	Coefficient	Std. Error	t-Statistic	
Constant	2.604	0.504	5.163	
$\log(M1_t)$	0.415	0.020	21.272	
$\log(e_t)$	0.174	0.046	3.784	
$\log(PC_t)$	-0.253	0.051	-4.964	
d_t	0.107	0.052	2.042	
R-squared	0.951	Mean dependent var		4.795
Adjusted R-squared	0.947	S.D. dependent var		0.214
S.E. of regression	0.049	Akaike info criterion		-5.940
Sum squared resid	0.126	Schwarz criterion		-5.761
Log likelihood	93.423	F-statistic		251.375
Durbin-Watson stat	0.596	Prob(F-statistic)		0.000

Variable	Coefficient	Std. Error	t-Statistic	
Constant	1.981	0.411	4.823	
$\log(M2_t)$	0.392	0.015	25.650	
$\log(e_t)$	0.257	0.038	6.838	
$\log(PC_t)$	-0.225	0.042	-5.366	
d_t	0.122	0.044	2.764	
R-squared	0.965	Mean dependent var		4.795
Adjusted R-squared	0.962	S.D. dependent var		0.214
S.E. of regression	0.041	Akaike info criterion		-6.282
Sum squared resid	0.089	Schwarz criterion		-6.103
Log likelihood	103.158	F-statistic		359.022
Durbin-Watson stat	0.620	Prob(F-statistic)		0.000

Variable	Coefficient	Std. Error	t-Statistic	
Constant	2.016	0.437	4.615	
$\log(M3_t)$	0.411	0.017	24.065	
$\log(e_t)$	0.227	0.040	5.647	
$\log(PC_t)$	-0.242	0.045	-5.363	
d_t	0.118	0.047	2.528	
R-squared	0.961	Mean dependent var		4.795
Adjusted R-squared	0.958	S.D. dependent var		0.214
S.E. of regression	0.044	Akaike info criterion		-6.164
Sum squared resid	0.101	Schwarz criterion		-5.985
Log likelihood	99.806	F-statistic		317.734
Durbin-Watson stat	0.578	Prob(F-statistic)		0.000

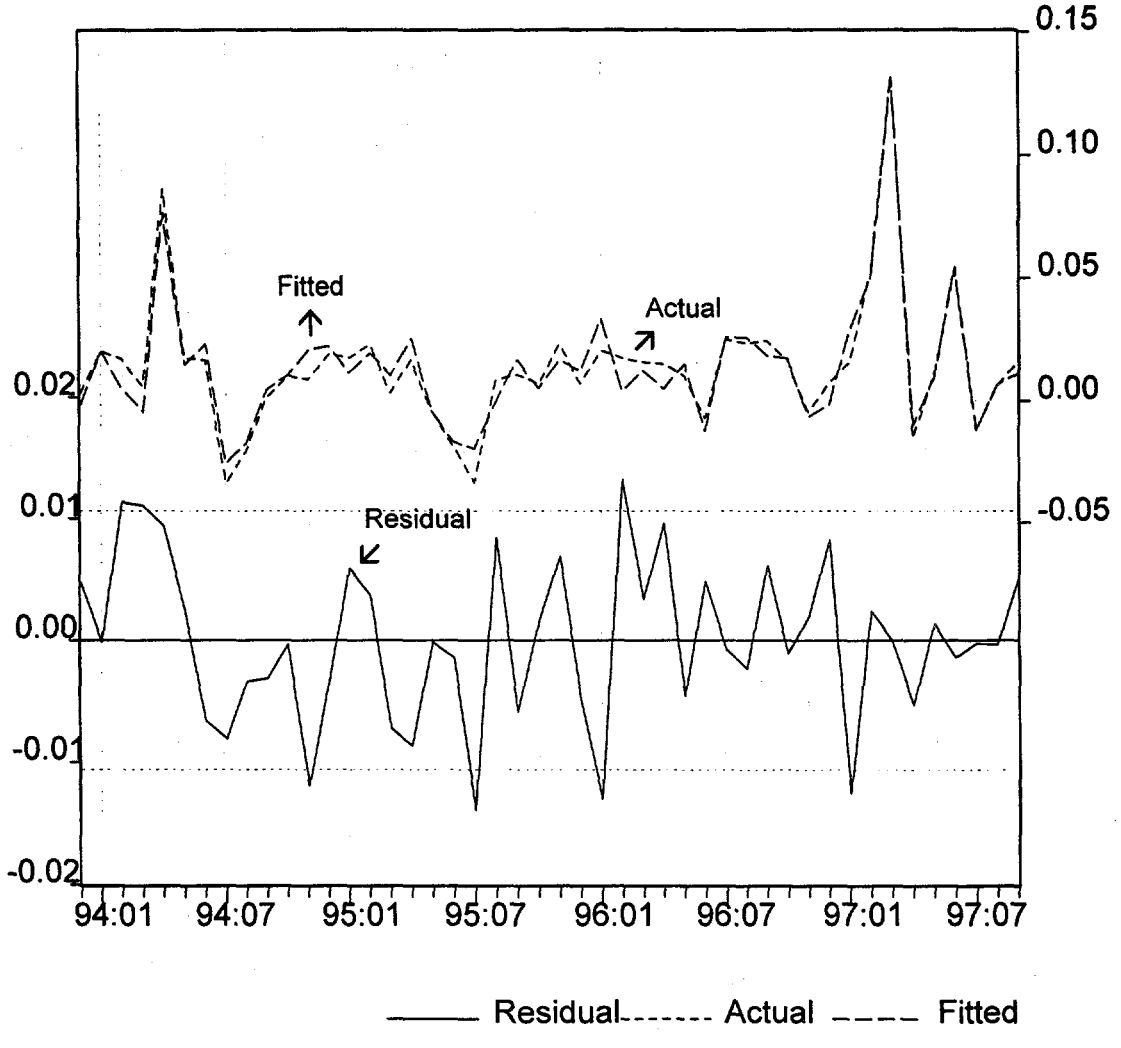
Note: d is a dummy variable included to capture the sharp increase in inflation in March 1997.

Table 7. Full Information Estimate of Equation (11)

Variable	Coefficient	Std. Error	t-Statistic
Constant	0.0416	0.0071	5.8458
$\Delta logP_{t-1}$	0.5888	0.1438	4.0958
$\Delta logP_{t-2}$	0.6065	0.1432	4.2366
$\Delta logP_{t-4}$	-1.3019	0.1958	-6.6485
$\Delta logP_{t-5}$	1.1291	0.1961	5.7583
$\Delta logP_{t-9}$	1.2892	0.1546	8.3398
$\Delta logP_{t-10}$	-0.7631	0.1600	-4.7698
$\Delta logM1_{t-4}$	-0.2670	0.0749	-3.5671
$\Delta logM1_{t-6}$	-0.9056	0.1358	-6.6707
$\Delta logM1_{t-7}$	0.2211	0.0705	3.1341
$\Delta logM1_{t-10}$	-0.7346	0.1233	-5.9586
$\Delta loge_{t-1}$	0.3269	0.0552	5.9262
$\Delta loge_{t-2}$	-1.0275	0.1540	-6.6714
$\Delta loge_{t-4}$	-0.1743	0.0764	-2.2820
$\Delta loge_{t-5}$	0.7116	0.1419	5.0139
$\Delta loge_{t-6}$	-0.8012	0.1567	-5.1132
$\Delta loge_{t-7}$	1.4846	0.2357	6.2978
$\Delta loge_{t-8}$	-1.7083	0.2758	-6.1940
$\Delta loge_{t-9}$	0.5006	0.1435	3.4874
$\Delta loge_{t-10}$	-0.3445	0.1088	-3.1675
$\Delta logPC_{t-2}$	0.1090	0.0302	3.6036
$\Delta logPC_{t-4}$	0.2342	0.0538	4.3510
$\Delta logPC_{t-6}$	0.2881	0.0451	6.3834
$\Delta logPC_{t-7}$	-0.3017	0.0613	-4.9218
$\Delta logPC_{t-8}$	0.2112	0.0434	4.8689
$\Delta logPC_{t-9}$	0.1130	0.0432	2.6155
EC_{t-1}	-0.2487	0.0698	-3.5650
d_t	0.2903	0.0300	9.6857

R-squared	0.9382	Jarque-Bera	0.7391
Adjusted R-squared	0.8456	S.D. dependent var	0.0270
S.E. of regression	0.0106	Akaike info criterion	-8.8095
Sum squared resid	0.0020	Schwarz criterion	-7.6964
Log likelihood	165.3466	F-statistic	10.1264
Durbin-Watson stat	1.9950	Prob(F-statistic)	0.0000

Figure 4. Albania: Actual and Fitted Changes in the CPI, 1993:01-1997:09



VII. CONCLUSIONS

This paper examines the inflation process in Albania by using three different alternative approaches. The first approach decomposes inflation into four components: *seasonal*, *cyclical*, *trend*, and *random*. The second approach relies on the widely employed Granger-causality test by using disaggregated data on both the consumer price index (CPI) and the key economic variables. The third approach applies co-integration and error-correction techniques to the inflation process -- a process which is outlined by a simple theoretical model.

The results showed that inflation exhibits strong seasonal patterns, peaking in February and reaching its through in July. The marked seasonality of prices could be due, in large part, to agricultural seasonality (agriculture comprises more than half of Albania's GDP). An interesting finding was that peaks and troughs of monetary aggregates correspond to those of inflation with a two month lag. We also found that the exchange rate exhibited a stable seasonality, reaching its through in August and showing a tendency to depreciate during the first part of the year. Better infrastructure, and with it lower transport costs, as well as improved customs services may be crucial to reduce seasonality in an open economy such as Albania.

The results of the Granger Causality tests indicated that causality runs from credit to government to the price of non-tradables. This finding has an important policy implication: an increase in credit to government as a result of the fiscal deficit will lead to an increase in the price of non-tradables. This, in turn, will produce an appreciation in

the real exchange rate, thereby reducing the country's export competitiveness. Consequently, reducing the fiscal deficit is necessary, not only for containing inflation, but also for increasing the country's export competitiveness. Moreover, the empirical evidence also indicated that M2 has predictive power on the price of non-tradable goods.

Furthermore, the empirical findings indicated that M1 and the exchange rate are both important predictors for most of the individual items of the CPI. The results also showed that credit to government is a good predictor for price movement of medical care, transportation and communication. There appears also to be a bi-directional causality between credit to government and rent, water, fuel, and power component. On the other hand, there is strong evidence that causality runs from prices of bread and cereals, recreation, education and culture to credit to government since these items are subsidized and contribute to the budget deficit.

The results of both co-integration and error-correction techniques confirmed that there is a long-run equilibrium relationship between prices, money, the exchange rate, and real income. In line with theory, the findings demonstrate that, in the long-run, inflation in Albania is positively related to money supply and exchange rate, while it is negatively related to real income. More specifically, in the long-run, a 1 percent increase in M1 will raise inflation by 0.41 percent; a 1 percent depreciation of the Lek will increase inflation by 0.17 percent On the other hand, a 1 percent increase in real income will reduce inflation by 0.25 percent.

The empirical findings from the error-correction model showed that inflation adjusts to its equilibrium value fairly rapidly, that is 25 percent per month (roughly speaking, the adjustment will be completed in four months). In addition, according to

the findings of this exercise, the impact of the exchange rate on inflation is transmitted with a one month delay, while the effect of real income and money on inflation takes place with a 2 and 4 month delay, respectively.

The findings of the study lend support to the conventional elements of a typical stabilization package. More specifically, reducing the budget deficit and, concomitantly, credit to government are crucial to fight inflation and sustain the competitiveness of exports. Strong seasonal patterns of inflation can, to some degree, be ameliorated by improving both infrastructure and customs services. Finally, given the significant negative impact of economic growth on inflation, structural reforms and infrastructural improvements to increase the country's productive capacity should also be considered as important elements of an overall stabilization program.

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APPENDIX 1 : Data Description and Sources

CPI: is defined as the consumer price index [1993:01-1997:09].

CPI Components: 16 individual item of the CPI [1993:01-1997:03].

PC: Power consumption [1993:01-1997:09].

MB: is currency outside banks plus reserves [1993:12-1997:09].

M1: is currency outside of banks plus demand deposits [1993:01-1997:09].

M2: is M1 plus time deposits [1993:01-1997:09].

M3: is M2 plus foreign currency deposits [1993:01-1997:09].

CRG: is credit to government obtained from the monetary survey [1993:01-1997:09].

USD: is the Lek/USD exchange rate, period average [1993:01-1997:09].

DM: is the Lek/German Mark exchange rate, period average [1994:01-1997:09].

ITL: is the Lek/Italian Lira exchange rate, period average [1994:01-1997:09].

GRD: is the Lek/Greek Drachma exchange rate, period average [1994:01-1997:09].

All data are obtained from the Ministry of Finance, the Bank of Albania, KESH and INSTAT .

APPENDIX 2: The Results of the Granger Causality Tests

Table 2.1 The Results of the Granger Causality Tests [X=Beverages at Home, weight=1.98%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	**74.27%**	**20.48%**	**65.57%**	**78.89%**	**83.10%**	**42.15%**	**57.65%**	**20.81%**	**76.41%**	**61.54%**	**0.28%**	**15.40%**	**8.77%**	**18.83%**	**6.18%**	**21.55%**	**8.21%**	**11.50%**
2	**37.47%**	**22.14%**	**24.68%**	**74.79%**	**78.71%**	**81.96%**	**12.76%**	**28.35%**	**95.27%**	**88.79%**	**0.84%**	**46.92%**	**4.59%**	**63.49%**	**8.05%**	**71.80%**	**8.48%**	**39.16%**
3	**76.91%**	**23.98%**	**35.64%**	**8.35%**	**25.26%**	**47.50%**	**33.29%**	**28.80%**	**83.38%**	**93.86%**	**0.11%**	**65.51%**	**9.00%**	**75.53%**	**8.64%**	**81.86%**	**6.77%**	**63.31%**
4	**40.82%**	**29.21%**	**10.29%**	**17.56%**	**39.56%**	**19.71%**	**51.16%**	**46.98%**	**11.96%**	**96.28%**	**0.33%**	**60.34%**	**1.73%**	**46.60%**	**5.05%**	**60.61%**	**9.39%**	**68.41%**
5	**24.40%**	**32.61%**	**7.43%**	**0.75%**	**53.49%**	**9.96%**	**66.39%**	**9.77%**	**22.72%**	**97.87%**	**2.46%**	**73.32%**	**2.23%**	**64.65%**	**10.14%**	**89.43%**	**17.38%**	**74.13%**
6	**13.71%**	**14.14%**	**6.81%**	**2.26%**	**61.14%**	**14.78%**	**71.02%**	**21.45%**	**37.17%**	**98.25%**	**4.34%**	**69.77%**	**2.97%**	**24.40%**	**7.62%**	**31.69%**	**26.57%**	**58.05%**
7	**3.31%**	**18.50%**	**15.03%**	**3.03%**	**72.33%**	**15.55%**	**82.02%**	**12.04%**	**6.34%**	**98.97%**	**8.99%**	**85.28%**	**5.65%**	**25.78%**	**18.18%**	**28.96%**	**25.92%**	**88.39%**
8	**1.09%**	**11.53%**	**14.29%**	**5.17%**	**78.22%**	**20.51%**	**46.60%**	**14.35%**	**11.44%**	**99.24%**	**14.86%**	**90.54%**	**10.27%**	**37.60%**	**16.11%**	**33.36%**	**34.55%**	**97.20%**
9	**0.26%**	**5.48%**	**4.44%**	**3.24%**	**65.93%**	**16.75%**	**29.09%**	**17.70%**	**14.82%**	**99.73%**	**12.03%**	**75.24%**	**19.18%**	**55.36%**	**22.45%**	**54.79%**	**47.62%**	**95.36%**
10	**0.48%**	**27.92%**	**9.97%**	**4.15%**	**77.82%**	**37.57%**	**39.05%**	**24.88%**	**23.57%**	**84.99%**	**19.55%**	**80.64%**	**6.68%**	**46.02%**	**6.28%**	**26.94%**	**34.37%**	**28.63%**
11	**1.50%**	**42.69%**	**17.19%**	**7.71%**	**79.32%**	**54.50%**	**45.62%**	**33.70%**	**31.81%**	**91.90%**	**30.07%**	**83.00%**	**12.72%**	**66.15%**	**5.07%**	**32.71%**	**7.28%**	**4.50%**
12	**8.46%**	**71.03%**	**14.72%**	**6.80%**	**73.49%**	**54.62%**	**39.58%**	**12.41%**	**35.72%**	**1.25%**	**38.98%**	**33.79%**	**22.23%**	**80.03%**	**17.18%**	**57.50%**	**16.19%**	**20.65%**

Notes: The numbers in the tables are marginal significance level (p-values) of F-tests for the null of non-Granger causality of the variable in question. Bold indicates p-values equal to or less than 5%.

Table 2.2 The Results of the Granger Causality Tests [X=Bread and Cereals, weight=15.47%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	**61.94%**	**29.71%**	**7.01%**	**88.90%**	**3.26%**	**76.51%**	**34.05%**	**80.29%**	**83.33%**	**85.94%**	**8.29%**	**14.03%**	**38.29%**	**82.80%**	**31.74%**	**78.67%**	**47.81%**	**53.35%**
2	**53.39%**	**53.65%**	**20.70%**	**65.07%**	**11.09%**	**39.97%**	**65.19%**	**60.55%**	**97.88%**	**89.80%**	**23.01%**	**31.65%**	**61.24%**	**79.80%**	**45.68%**	**80.89%**	**69.36%**	**40.09%**
3	**65.39%**	**69.10%**	**35.66%**	**69.87%**	**23.18%**	**61.94%**	**73.54%**	**81.29%**	**97.60%**	**97.19%**	**37.14%**	**51.55%**	**68.78%**	**88.52%**	**65.23%**	**93.27%**	**84.85%**	**43.39%**
4	**79.43%**	**66.74%**	**52.82%**	**75.89%**	**33.43%**	**69.58%**	**79.61%**	**37.77%**	**99.46%**	**91.27%**	**45.95%**	**58.30%**	**32.06%**	**59.97%**	**56.52%**	**78.82%**	**89.59%**	**30.52%**
5	**82.91%**	**80.59%**	**69.75%**	**87.23%**	**47.15%**	**54.76%**	**29.49%**	**35.66%**	**96.84%**	**0.00%**	**60.17%**	**52.89%**	**42.14%**	**62.01%**	**65.73%**	**79.10%**	**91.26%**	**31.86%**
6	**70.75%**	**87.80%**	**69.41%**	**47.59%**	**46.97%**	**40.62%**	**33.97%**	**40.97%**	**98.14%**	**0.00%**	**66.05%**	**9.30%**	**52.70%**	**41.20%**	**77.85%**	**32.45%**	**98.14%**	**34.31%**
7	**60.62%**	**90.86%**	**45.73%**	**65.32%**	**81.77%**	**56.19%**	**69.18%**	**52.87%**	**45.48%**	**0.00%**	**76.96%**	**17.73%**	**63.38%**	**6.30%**	**89.96%**	**1.96%**	**99.69%**	**25.40%**
8	**51.64%**	**54.77%**	**70.22%**	**79.58%**	**99.31%**	**71.06%**	**67.76%**	**50.33%**	**32.92%**	**0.00%**	**86.72%**	**22.25%**	**55.23%**	**1.86%**	**94.98%**	**1.12%**	**99.21%**	**47.24%**
9	**62.05%**	**65.60%**	**70.96%**	**62.02%**	**89.06%**	**81.88%**	**59.01%**	**90.57%**	**11.27%**	**0.00%**	**88.98%**	**30.27%**	**21.29%**	**0.27%**	**34.09%**	**0.21%**	**97.51%**	**25.22%**
10	**78.53%**	**36.81%**	**58.69%**	**68.00%**	**82.23%**	**77.98%**	**71.88%**	**96.27%**	**13.24%**	**0.00%**	**93.77%**	**30.00%**	**43.81%**	**0.63%**	**55.73%**	**0.26%**	**67.07%**	**42.44%**
11	**72.77%**	**7.13%**	**71.12%**	**87.92%**	**90.41%**	**81.06%**	**84.08%**	**74.07%**	**14.88%**	**0.00%**	**62.11%**	**46.16%**	**44.98%**	**3.01%**	**38.39%**	**1.11%**	**69.80%**	**56.49%**
12	**90.26%**	**1.72%**	**65.23%**	**37.48%**	**95.20%**	**76.93%**	**89.14%**	**32.31%**	**27.01%**	**63.44%**	**17.10%**	**90.77%**	**44.06%**	**12.16%**	**20.52%**	**6.45%**	**38.76%**	**69.62%**

Table 2.3 The Results of the Granger Causality Tests [X= Clothing and footwear, weight=2.82%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	**5.58%**	**28.02%**	**0.56%**	**88.11%**	**6.24%**	**81.81%**	**6.83%**	**80.74%**	**92.35%**	**97.05%**	**14.73%**	**79.95%**	**62.13%**	**89.50%**	**53.93%**	**58.70%**	**55.25%**	**57.22%**
2	**24.07%**	**6.68%**	**1.95%**	**75.16%**	**10.50%**	**24.99%**	**14.22%**	**75.88%**	**98.44%**	**91.86%**	**26.10%**	**35.10%**	**72.27%**	**58.08%**	**73.85%**	**34.63%**	**70.17%**	**36.32%**
3	**39.69%**	**8.70%**	**1.77%**	**4.53%**	**14.86%**	**30.07%**	**28.37%**	**91.09%**	**96.27%**	**95.06%**	**25.18%**	**31.18%**	**19.86%**	**78.11%**	**35.55%**	**61.11%**	**49.78%**	**58.04%**
4	**60.69%**	**6.71%**	**1.77%**	**5.32%**	**25.84%**	**46.59%**	**43.09%**	**93.36%**	**98.56%**	**92.27%**	**40.92%**	**54.29%**	**16.10%**	**86.84%**	**29.09%**	**80.85%**	**45.22%**	**71.93%**
5	**70.63%**	**5.17%**	**1.49%**	**5.98%**	**33.82%**	**25.58%**	**25.45%**	**81.40%**	**99.42%**	**96.72%**	**50.05%**	**27.96%**	**15.29%**	**23.09%**	**33.59%**	**23.71%**	**61.08%**	**26.03%**
6	**52.92%**	**4.16%**	**5.06%**	**3.86%**	**53.34%**	**24.32%**	**19.93%**	**77.11%**	**99.23%**	**98.62%**	**23.07%**	**0.96%**	**11.57%**	**34.64%**	**25.87%**	**15.43%**	**45.67%**	**7.90%**
7	**46.05%**	**5.66%**	**7.89%**	**0.84%**	**56.24%**	**23.53%**	**29.52%**	**60.42%**	**98.06%**	**99.51%**	**32.03%**	**0.01%**	**16.24%**	**20.89%**	**39.53%**	**13.95%**	**44.66%**	**14.38%**
8	**2.78%**	**6.63%**	**20.73%**	**1.79%**	**74.12%**	**30.72%**	**36.27%**	**66.35%**	**98.59%**	**97.84%**	**29.80%**	**0.03%**	**24.16%**	**34.21%**	**50.52%**	**30.39%**	**63.42%**	**24.02%**
9	**16.14%**	**2.76%**	**34.03%**	**3.67%**	**61.56%**	**49.91%**	**14.01%**	**90.98%**	**94.71%**	**97.99%**	**25.50%**	**0.05%**	**13.25%**	**34.51%**	**17.60%**	**26.10%**	**46.82%**	**34.18%**
10	**3.22%**	**22.37%**	**49.47%**	**7.19%**	**70.24%**	**53.67%**	**26.59%**	**94.88%**	**96.92%**	**65.75%**	**35.67%**	**0.07%**	**23.89%**	**49.73%**	**26.85%**	**49.50%**	**65.97%**	**30.95%**
11	**10.08%**	**29.06%**	**61.05%**	**13.56%**	**64.52%**	**61.13%**	**27.88%**	**97.55%**	**95.59%**	**53.94%**	**25.49%**	**0.19%**	**17.19%**	**23.39%**	**18.37%**	**51.98%**	**86.97%**	**53.59%**
12	**25.05%**	**16.73%**	**62.43%**	**8.63%**	**78.83%**	**33.60%**	**42.55%**	**84.77%**	**87.25%**	**94.81%**	**24.35%**	**0.81%**	**10.68%**	**39.70%**	**15.94%**	**59.12%**	**1.38%**	**21.19%**

Table 2.4 The Results of the Granger Causality Tests [X=Dairy products and Eggs, weight=12.99%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	**19.48%**	**35.71%**	**10.53%**	**82.64%**	**68.57%**	**78.37%**	**63.20%**	**61.98%**	**99.17%**	**24.15%**	**0.15%**	**0.87%**	**15.02%**	**12.19%**	**10.39%**	**6.74%**	**7.51%**	**16.88%**
2	**14.45%**	**5.61%**	**2.93%**	**99.81%**	**92.81%**	**87.47%**	**50.45%**	**20.69%**	**95.87%**	**51.89%**	**0.85%**	**1.50%**	**36.57%**	**7.40%**	**28.21%**	**4.86%**	**20.84%**	**8.60%**
3	**18.35%**	**7.98%**	**6.37%**	**55.98%**	**90.26%**	**45.31%**	**35.80%**	**35.28%**	**96.91%**	**48.99%**	**2.68%**	**2.77%**	**58.22%**	**7.35%**	**35.17%**	**3.37%**	**16.01%**	**4.36%**
4	**17.37%**	**9.36%**	**10.66%**	**83.82%**	**98.32%**	**36.45%**	**61.79%**	**27.56%**	**95.87%**	**66.75%**	**0.40%**	**2.08%**	**19.68%**	**1.35%**	**13.57%**	**1.64%**	**3.88%**	**2.91%**
5	**31.29%**	**18.57%**	**16.03%**	**86.01%**	**93.58%**	**45.11%**	**23.28%**	**24.04%**	**98.99%**	**70.13%**	**0.29%**	**3.52%**	**14.84%**	**1.26%**	**23.08%**	**1.64%**	**3.83%**	**0.49%**
6	**41.44%**	**29.47%**	**23.14%**	**28.29%**	**97.61%**	**40.98%**	**33.94%**	**20.96%**	**99.25%**	**68.19%**	**0.52%**	**0.60%**	**29.12%**	**24.61%**	**33.85%**	**12.68%**	**5.24%**	**1.67%**
7	**46.08%**	**33.66%**	**31.75%**	**19.68%**	**97.08%**	**35.06%**	**50.16%**	**10.41%**	**99.57%**	**63.12%**	**0.32%**	**1.36%**	**11.31%**	**34.30%**	**29.75%**	**12.37%**	**11.68%**	**0.76%**
8	**58.91%**	**58.32%**	**40.62%**	**26.22%**	**97.35%**	**40.12%**	**61.14%**	**14.92%**	**95.39%**	**73.23%**	**0.92%**	**2.58%**	**41.20%**	**34.36%**	**38.88%**	**13.42%**	**40.41%**	**1.23%**
9	**41.29%**	**61.77%**	**54.12%**	**12.77%**	**98.65%**	**37.54%**	**56.73%**	**30.02%**	**61.26%**	**75.20%**	**0.71%**	**5.09%**	**46.72%**	**41.79%**	**38.98%**	**20.53%**	**59.69%**	**3.58%**
10	**47.68%**	**93.12%**	**68.23%**	**30.08%**	**96.43%**	**38.63%**	**59.86%**	**42.62%**	**68.95%**	**79.09%**	**1.05%**	**3.71%**	**40.43%**	**57.72%**	**25.84%**	**48.37%**	**35.88%**	**9.94%**
11	**41.34%**	**71.52%**	**85.06%**	**38.72%**	**96.48%**	**49.21%**	**66.33%**	**50.26%**	**62.05%**	**49.99%**	**1.04%**	**0.92%**	**72.09%**	**50.98%**	**47.30%**	**44.68%**	**30.60%**	**18.60%**
12	**23.52%**	**76.47%**	**55.71%**	**20.01%**	**41.35%**	**27.23%**	**12.61%**	**16.25%**	**71.67%**	**55.55%**	**3.56%**	**4.19%**	**37.15%**	**66.73%**	**26.89%**	**47.54%**	**55.34%**	**34.22%**

Table 2.5 The Results of the Granger Causality Tests [X=Food and Beverages Away from Home, weight=0.88%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	76.10%	57.39%	30.15%	98.00%	75.08%	25.71%	29.91%	16.63%	77.76%	71.64%	37.86%	13.35%	11.89%	17.31%	12.00%	18.42%	38.97%	11.45%
2	26.15%	30.00%	**1.22%**	65.02%	37.39%	27.10%	7.10%	18.66%	31.65%	91.98%	7.17%	38.33%	**3.86%**	52.01%	**4.80%**	65.78%	17.02%	51.93%
3	54.24%	38.52%	**2.26%**	38.16%	33.06%	23.64%	12.31%	16.92%	60.16%	85.32%	8.35%	56.00%	7.09%	52.35%	**4.72%**	84.54%	5.39%	68.37%
4	37.08%	36.71%	**4.96%**	67.91%	50.27%	15.70%	13.32%	16.89%	33.83%	81.30%	**0.93%**	82.63%	13.59%	86.91%	11.35%	94.62%	9.54%	91.20%
5	26.02%	44.24%	6.71%	79.17%	39.20%	17.32%	13.49%	16.96%	41.00%	79.84%	**1.72%**	80.69%	21.58%	62.41%	18.42%	81.79%	14.11%	79.31%
6	22.84%	37.40%	7.96%	63.45%	43.15%	66.46%	16.57%	42.56%	43.51%	46.98%	**2.65%**	50.61%	22.54%	56.57%	19.33%	93.03%	7.82%	75.64%
7	20.59%	48.13%	13.52%	25.13%	61.79%	66.26%	27.18%	7.03%	43.65%	26.08%	**5.80%**	80.99%	27.85%	37.28%	19.84%	82.93%	25.78%	76.67%
8	26.45%	39.59%	30.11%	20.87%	92.98%	30.24%	54.16%	5.75%	33.40%	19.67%	**8.66%**	75.73%	23.88%	45.80%	11.77%	46.71%	33.00%	16.76%
9	14.82%	44.10%	42.17%	8.57%	93.38%	31.56%	68.74%	7.36%	29.63%	10.93%	12.40%	65.43%	46.11%	60.79%	25.01%	53.66%	47.31%	**4.53%**
10	7.89%	57.12%	53.09%	6.40%	91.26%	35.19%	82.64%	13.37%	45.29%	7.81%	12.05%	54.32%	29.35%	62.00%	**4.76%**	34.08%	6.76%	6.57%
11	14.94%	30.45%	26.16%	12.20%	90.07%	46.15%	80.09%	7.93%	53.41%	**4.59%**	**4.73%**	50.27%	51.92%	82.36%	18.63%	51.83%	11.90%	11.19%
12	35.35%	42.38%	15.77%	3.03%	84.70%	76.96%	76.31%	6.67%	31.70%	62.84%	15.20%	33.55%	47.97%	75.77%	44.21%	79.07%	6.16%	28.13%

Table 2.6 The Results of the Granger Causality Tests [X=Fruits and vegetables, weight=14.95%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	18.70%	68.43%	**1.74%**	70.45%	20.60%	89.26%	97.23%	40.97%	90.94%	60.70%	7.36%	**0.38%**	**3.91%**	17.78%	6.88%	13.52%	9.78%	**3.18%**
2	**1.80%**	71.18%	**0.05%**	95.57%	26.58%	36.97%	62.06%	54.40%	93.57%	86.93%	24.62%	**1.49%**	9.15%	47.75%	9.69%	19.69%	14.12%	10.16%
3	**4.71%**	37.23%	**0.07%**	77.89%	15.55%	50.09%	50.67%	36.26%	99.04%	83.53%	44.18%	**1.14%**	21.37%	35.64%	23.77%	17.50%	29.50%	10.22%
4	6.99%	41.33%	**0.15%**	76.63%	31.81%	60.73%	62.18%	8.22%	97.51%	91.84%	37.23%	**0.95%**	9.73%	22.72%	22.05%	13.65%	39.62%	9.39%
5	9.33%	42.90%	**0.39%**	91.18%	29.27%	72.12%	15.55%	12.05%	92.80%	17.00%	31.69%	**1.65%**	6.55%	40.18%	9.46%	19.16%	37.84%	14.88%
6	**2.68%**	48.47%	**0.49%**	27.48%	38.32%	34.16%	21.99%	19.84%	68.80%	25.46%	40.73%	**2.94%**	16.76%	13.05%	20.68%	25.68%	61.25%	38.54%
7	13.99%	63.20%	**0.46%**	47.01%	75.77%	45.51%	52.98%	33.27%	51.22%	38.28%	36.18%	**4.41%**	5.51%	21.78%	18.94%	28.16%	81.44%	41.82%
8	12.40%	63.56%	**0.68%**	60.17%	66.86%	60.24%	38.29%	47.56%	35.70%	48.67%	37.85%	7.35%	12.15%	25.59%	34.27%	26.45%	87.61%	56.63%
9	18.68%	75.58%	**1.94%**	64.22%	83.39%	77.81%	44.74%	84.84%	47.88%	52.58%	32.95%	12.77%	5.83%	34.24%	9.17%	29.38%	84.01%	36.48%
10	28.23%	85.12%	**3.27%**	79.12%	90.28%	79.94%	63.88%	90.62%	64.03%	66.85%	38.33%	19.46%	15.94%	39.55%	18.68%	38.87%	38.90%	56.63%
11	24.64%	89.64%	**3.10%**	80.70%	75.68%	84.81%	77.01%	87.62%	80.92%	76.29%	30.53%	27.33%	25.16%	29.46%	41.83%	35.31%	62.10%	32.08%
12	48.18%	94.48%	8.82%	27.71%	85.39%	75.23%	89.18%	44.78%	90.04%	62.75%	46.02%	**3.38%**	53.51%	44.80%	62.25%	67.54%	68.45%	13.55%

Table 2.7 The Results of the Granger Causality Tests [X=Household Goods, weight=8.27%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	9.00%	28.83%	**1.41%**	59.35%	**2.09%**	85.43%	7.23%	32.69%	97.95%	84.85%	**4.71%**	32.69%	20.13%	38.83%	16.78%	46.19%	13.43%	38.48%
2	**1.66%**	15.75%	**0.43%**	24.82%	10.44%	83.06%	20.27%	43.17%	97.94%	97.26%	13.36%	76.60%	20.27%	82.67%	30.30%	95.18%	32.64%	52.90%
3	**2.15%**	6.93%	**0.05%**	29.05%	12.62%	20.74%	34.07%	67.34%	99.40%	99.41%	9.28%	**4.15%**	**0.46%**	10.89%	**1.19%**	15.40%	10.06%	21.66%
4	6.39%	9.13%	**0.14%**	21.92%	14.61%	23.61%	47.46%	53.83%	99.72%	99.90%	11.80%	**4.69%**	**0.35%**	**0.32%**	**1.98%**	**2.36%**	17.37%	8.52%
5	8.06%	11.34%	**0.28%**	20.77%	25.53%	30.92%	45.43%	45.22%	99.24%	98.42%	**2.70%**	**1.61%**	**1.32%**	**0.14%**	5.67%	**0.19%**	32.51%	**4.34%**
6	8.72%	9.56%	**0.43%**	**4.24%**	36.57%	21.34%	39.34%	31.27%	99.61%	99.61%	**3.98%**	**0.34%**	**3.15%**	**4.47%**	12.24%	5.50%	48.99%	13.74%
7	4.97%	19.36%	**0.86%**	7.28%	42.48%	8.90%	35.53%	17.51%	99.82%	99.43%	7.12%	**1.07%**	5.94%	11.74%	23.21%	7.72%	66.43%	21.95%
8	**2.77%**	17.66%	**0.90%**	13.21%	50.06%	17.70%	11.84%	29.14%	99.74%	99.76%	12.36%	**1.61%**	17.06%	18.43%	33.35%	9.70%	59.48%	29.76%
9	**3.09%**	**3.35%**	**0.19%**	**2.28%**	30.06%	**4.48%**	7.05%	17.36%	99.70%	99.93%	16.70%	**1.46%**	12.22%	27.23%	23.30%	26.67%	35.85%	48.67%
10	**0.49%**	33.59%	**0.56%**	**4.56%**	45.66%	9.42%	11.99%	26.83%	99.80%	98.86%	21.71%	**1.75%**	17.30%	39.83%	7.55%	16.99%	**3.34%**	46.00%
11	**2.52%**	65.12%	**1.01%**	8.82%	36.66%	6.41%	15.60%	32.43%	99.94%	70.38%	18.84%	**0.47%**	8.33%	39.58%	12.88%	10.91%	8.14%	30.40%
12	**3.76%**	51.43%	**3.60%**	**4.36%**	48.04%	7.04%	21.04%	6.22%	99.98%	97.09%	11.20%	**0.12%**	15.86%	58.38%	23.43%	35.04%	7.39%	24.01%

Table 2.8 The Results of the Granger Causality Tests [X=Meat, Poultry and Fish, weight=13.28%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	44.24%	11.07%	26.88%	65.58%	54.07%	9.54%	57.74%	12.02%	94.82%	89.46%	**0.73%**	7.34%	**0.75%**	11.65%	**0.40%**	16.64%	**1.29%**	20.29%
2	**1.39%**	22.69%	**0.00%**	46.68%	**2.32%**	26.84%	18.43%	89.77%	61.38%	52.32%	**1.34%**	4.83%	**4.19%**	**0.70%**	**2.19%**	5.51%	**4.77%**	**3.98%**
3	5.47%	7.04%	**0.01%**	56.82%	**1.09%**	29.56%	6.02%	92.00%	63.29%	82.38%	**3.98%**	12.39%	14.94%	**2.45%**	**7.92%**	13.06%	11.17%	9.32%
4	13.06%	9.65%	**0.01%**	83.13%	**1.88%**	33.42%	7.33%	89.07%	71.51%	87.74%	**0.00%**	12.16%	**4.45%**	**0.25%**	**3.69%**	**0.68%**	**3.41%**	**2.64%**
5	30.18%	10.22%	**0.02%**	84.28%	**1.41%**	4.77%	**2.56%**	34.03%	73.70%	85.81%	**0.10%**	7.68%	**4.69%**	**1.05%**	**6.36%**	**1.77%**	8.30%	**3.01%**
6	32.91%	8.97%	**0.10%**	86.50%	**0.71%**	39.30%	**1.23%**	71.36%	77.84%	85.42%	**0.51%**	0.69%	**0.33%**	**4.33%**	**3.10%**	5.24%	8.62%	**5.74%**
7	39.16%	17.40%	**0.17%**	7.70%	5.11%	11.41%	7.30%	5.52%	92.48%	38.65%	**1.18%**	**1.96%**	**1.00%**	**3.66%**	7.85%	**2.69%**	25.27%	10.34%
8	29.39%	31.73%	**0.10%**	**2.55%**	8.10%	7.65%	13.83%	**2.19%**	79.77%	18.61%	**1.17%**	**0.26%**	**2.75%**	9.09%	14.02%	6.50%	46.72%	27.10%
9	16.50%	32.43%	**0.41%**	12.70%	8.19%	21.17%	7.53%	11.05%	88.98%	**3.36%**	**0.50%**	**0.46%**	6.43%	6.54%	27.79%	7.32%	65.25%	27.63%
10	16.45%	88.57%	**1.00%**	8.75%	10.56%	25.74%	11.53%	11.40%	94.35%	**0.48%**	**0.22%**	**0.50%**	3.44%	14.01%	**1.70%**	14.14%	13.44%	31.89%
11	16.39%	99.40%	**0.71%**	20.60%	15.63%	16.22%	8.15%	15.77%	80.37%	**0.00%**	**0.53%**	**1.00%**	6.31%	27.14%	5.84%	10.58%	14.57%	36.78%
12	34.92%	89.20%	**2.11%**	7.34%	10.35%	29.63%	9.88%	47.67%	69.29%	22.75%	**0.62%**	8.84%	18.65%	22.14%	23.12%	5.75%	21.75%	46.22%

Table 2.9 The Results of the Granger Causality Tests [X=Medical Care, weight=0.92%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	77.23%	52.34%	89.25%	54.64%	74.64%	51.95%	56.61%	90.64%	15.72%	95.69%	90.91%	98.05%	67.27%	47.72%	53.16%	62.49%	44.43%	92.38%
2	18.49%	44.97%	85.67%	42.23%	81.95%	71.61%	76.31%	43.58%	**0.00%**	80.09%	84.35%	33.16%	14.73%	10.53%	17.87%	13.64%	24.27%	42.98%
3	20.18%	65.84%	75.28%	20.79%	79.59%	55.95%	68.56%	49.14%	**0.00%**	73.51%	94.18%	22.71%	37.18%	11.88%	45.39%	9.31%	55.63%	**3.45%**
4	49.06%	65.12%	85.79%	32.94%	79.41%	62.22%	75.50%	63.57%	**0.00%**	41.34%	98.09%	34.41%	20.52%	25.44%	33.43%	14.04%	35.98%	5.91%
5	59.52%	67.93%	61.42%	30.40%	47.79%	34.77%	62.19%	70.55%	**0.00%**	51.03%	53.14%	44.93%	35.60%	54.99%	64.83%	37.11%	48.52%	14.53%
6	76.69%	62.08%	61.50%	40.11%	52.69%	55.67%	71.95%	48.10%	**0.01%**	66.80%	76.94%	8.28%	37.52%	75.16%	69.66%	48.72%	56.21%	20.73%
7	76.08%	69.46%	73.51%	42.04%	65.70%	63.90%	82.56%	50.34%	**0.04%**	71.08%	74.40%	21.73%	50.14%	98.59%	75.59%	64.91%	61.71%	35.93%
8	85.50%	65.41%	87.17%	50.47%	60.02%	79.39%	91.94%	64.69%	**0.12%**	76.36%	74.50%	7.01%	59.48%	97.45%	79.11%	68.75%	72.58%	45.06%
9	92.57%	79.87%	90.95%	57.86%	66.74%	74.18%	89.36%	79.16%	**0.47%**	55.00%	79.36%	10.73%	57.21%	97.52%	62.90%	77.89%	55.91%	57.35%
10	95.34%	75.30%	88.92%	36.44%	62.47%	40.29%	88.36%	76.18%	**1.06%**	48.59%	79.31%	14.63%	82.04%	98.89%	83.09%	93.89%	74.77%	69.57%
11	98.66%	5.61%	92.60%	15.12%	73.09%	42.15%	91.00%	68.50%	**1.24%**	50.36%	83.10%	24.28%	59.05%	95.78%	84.69%	75.02%	47.18%	54.60%
12	98.22%	**2.24%**	98.23%	30.20%	51.60%	26.46%	53.51%	47.66%	**3.54%**	79.22%	82.76%	9.07%	59.41%	24.83%	95.70%	40.84%	72.23%	64.31%

Table 2.10 The Results of the Granger Causality Tests [X=Oils and Fats, weight=7.15%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	97.34%	16.08%	88.40%	99.73%	55.96%	5.29%	47.62%	78.33%	36.46%	62.74%	**0.55%**	**0.10%**	**1.52%**	**0.31%**	**4.30%**	**0.45%**	**4.12%**	**0.39%**
2	20.19%	24.00%	29.81%	71.42%	69.21%	24.78%	40.02%	66.55%	62.01%	75.35%	**1.94%**	**1.24%**	**6.36%**	**4.95%**	16.01%	**4.56%**	15.55%	5.44%
3	40.35%	14.83%	55.11%	26.80%	39.58%	18.79%	64.05%	55.68%	85.20%	91.39%	**0.65%**	**2.02%**	**1.80%**	**3.78%**	7.33%	**3.42%**	4.09%	**4.09%**
4	62.44%	17.23%	21.28%	26.51%	59.95%	29.01%	81.33%	68.04%	89.56%	95.23%	**0.92%**	10.09%	**3.77%**	**2.02%**	11.98%	**3.14%**	6.84%	8.24%
5	5.92%	29.44%	7.76%	39.87%	33.84%	34.13%	86.54%	55.59%	92.77%	97.13%	**1.27%**	22.32%	8.26%	**4.18%**	23.69%	**4.22%**	10.76%	17.60%
6	10.40%	27.33%	6.60%	56.04%	50.13%	53.86%	92.07%	80.24%	93.72%	98.92%	**2.84%**	**2.81%**	11.99%	5.79%	32.80%	16.05%	16.84%	27.67%
7	20.11%	33.57%	8.32%	56.50%	33.02%	51.35%	83.06%	74.80%	97.61%	91.09%	5.47%	**3.07%**	19.13%	3.84%	38.64%	9.49%	**3.59%**	26.55%
8	8.54%	57.05%	**4.39%**	58.56%	20.63%	38.96%	70.91%	44.35%	92.74%	88.01%	**4.49%**	**4.49%**	45.27%	8.31%	49.84%	5.33%	6.57%	10.99%
9	22.77%	33.30%	**4.93%**	46.76%	16.88%	57.46%	33.19%	67.36%	76.78%	88.81%	**3.73%**	**2.38%**	62.54%	15.94%	65.33%	**1.39%**	7.58%	22.60%
10	10.18%	73.19%	10.45%	54.74%	20.73%	67.81%	37.22%	78.08%	83.56%	93.71%	**3.23%**	**3.84%**	55.27%	34.29%	78.41%	**4.23%**	11.01%	19.31%
11	14.76%	91.32%	10.99%	46.41%	8.73%	80.37%	23.66%	88.09%	79.72%	70.50%	**4.45%**	**3.68%**	46.88%	53.71%	34.90%	11.01%	12.53%	39.61%
12	22.11%	87.96%	19.77%	16.90%	16.73%	22.48%	39.91%	78.95%	83.11%	53.13%	10.62%	10.53%	68.08%	81.43%	59.91%	37.76%	39.95%	28.83%

Table 2.11 The Results of the Granger Causality Tests [X=Personal Care, weight=0.46%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	50.53%	13.53%	89.92%	84.34%	39.15%	20.49%	58.13%	89.60%	94.89%	69.56%	**2.45%**	11.80%	19.94%	37.36%	19.55%	39.14%	35.51%	28.37%
2	19.67%	17.24%	6.50%	59.61%	50.09%	63.67%	26.32%	44.94%	58.51%	85.01%	**0.86%**	6.72%	**1.53%**	28.52%	6.62%	40.69%	6.03%	6.49%
3	29.29%	14.99%	7.60%	34.62%	13.28%	78.49%	6.93%	46.38%	52.91%	93.30%	**1.20%**	13.70%	10.68%	26.57%	25.06%	48.32%	34.97%	13.41%
4	17.24%	7.11%	**1.71%**	58.18%	43.01%	41.79%	28.59%	52.75%	62.86%	96.61%	**0.67%**	**1.83%**	**2.26%**	**2.58%**	8.86%	5.11%	23.71%	7.18%
5	17.88%	**4.56%**	**3.53%**	49.59%	54.50%	55.05%	31.06%	69.84%	73.31%	94.61%	**1.20%**	**0.74%**	**1.70%**	**4.68%**	6.28%	6.24%	25.34%	13.81%
6	9.66%	9.90%	**4.76%**	29.45%	57.91%	23.82%	41.94%	51.55%	68.71%	97.55%	**1.66%**	**1.80%**	**2.17%**	59.70%	**4.05%**	65.40%	46.22%	45.99%
7	7.63%	12.12%	5.51%	20.99%	42.88%	19.56%	20.77%	46.73%	45.45%	99.22%	**1.40%**	7.12%	**0.68%**	39.64%	**3.34%**	56.91%	64.15%	38.57%
8	**2.87%**	21.63%	10.91%	30.17%	60.82%	26.04%	31.90%	65.97%	56.34%	93.22%	**1.63%**	9.04%	**1.93%**	48.71%	**2.99%**	46.59%	79.19%	58.92%
9	5.89%	25.36%	15.24%	19.89%	65.36%	41.07%	38.34%	81.81%	71.36%	41.52%	**3.50%**	14.65%	6.56%	25.27%	8.70%	62.93%	85.73%	69.56%
10	5.88%	30.14%	19.81%	24.16%	68.40%	55.16%	50.58%	78.44%	77.27%	30.15%	**4.65%**	16.01%	**2.44%**	22.02%	**3.43%**	30.50%	13.99%	33.62%
11	10.18%	58.82%	22.08%	44.47%	61.39%	53.15%	64.70%	78.75%	86.47%	**0.74%**	6.62%	18.05%	6.24%	12.54%	7.99%	30.40%	**4.23%**	32.98%
12	12.99%	82.39%	25.10%	36.87%	81.30%	83.45%	80.68%	82.52%	93.78%	92.01%	7.93%	22.68%	7.46%	38.02%	5.71%	**1.69%**	**4.55%**	**3.96%**

Table 2.12 The Results of the Granger Causality Tests [X=Recreation, Education and Culture, weight=3.57%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	70.61%	40.15%	35.67%	91.03%	35.34%	27.40%	35.30%	31.21%	97.06%	12.63%	29.74%	59.83%	**2.96%**	23.45%	8.84%	26.08%	7.75%	45.81%
2	87.77%	24.39%	42.81%	54.18%	29.16%	40.76%	43.42%	90.99%	36.92%	29.43%	52.98%	52.81%	6.38%	45.55%	13.17%	35.44%	19.38%	35.47%
3	87.31%	17.02%	55.36%	61.90%	39.81%	42.05%	59.86%	52.87%	59.15%	**0.11%**	64.47%	60.70%	6.47%	32.87%	14.71%	21.91%	15.45%	23.03%
4	88.65%	35.78%	47.68%	89.42%	45.69%	48.37%	76.21%	76.18%	62.17%	**0.02%**	85.90%	81.88%	9.39%	55.29%	17.99%	50.88%	23.58%	45.57%
5	91.70%	51.62%	48.34%	96.18%	60.31%	25.37%	84.74%	94.64%	69.62%	**0.01%**	76.42%	89.55%	13.33%	66.27%	32.56%	62.88%	37.17%	62.00%
6	95.85%	61.47%	56.72%	93.64%	70.47%	81.11%	89.01%	98.70%	49.03%	**0.02%**	81.18%	90.87%	5.65%	93.86%	26.12%	85.44%	43.34%	21.03%
7	96.73%	71.23%	73.51%	98.65%	77.34%	75.62%	86.98%	98.64%	35.09%	**0.05%**	64.02%	89.96%	**2.81%**	84.17%	42.57%	92.41%	58.87%	38.45%
8	97.25%	70.05%	79.42%	97.44%	97.05%	80.56%	98.33%	95.84%	**4.05%**	**0.14%**	56.32%	88.65%	12.07%	83.01%	57.23%	94.40%	60.39%	29.78%
9	57.74%	79.72%	57.35%	87.20%	69.30%	87.62%	89.53%	94.16%	16.38%	**0.56%**	75.43%	87.86%	**1.04%**	92.74%	63.35%	94.66%	74.05%	48.30%
10	27.24%	99.01%	64.44%	94.58%	78.81%	84.98%	93.88%	97.25%	28.65%	**0.03%**	84.86%	84.42%	**3.15%**	81.58%	**3.19%**	98.16%	65.30%	64.54%
11	22.60%	99.41%	43.88%	99.00%	40.12%	85.96%	54.63%	94.70%	32.29%	**0.01%**	76.19%	92.69%	**4.86%**	72.74%	5.25%	75.40%	39.13%	74.82%
12	20.89%	93.75%	22.42%	78.18%	23.33%	36.16%	47.69%	94.72%	47.32%	36.27%	63.41%	53.58%	15.66%	89.01%	12.74%	89.96%	30.28%	58.85%

Table 2.13 The Results of the Granger Causality Tests [X=Rent, Water, Fuel, and Power, weight=6.41%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	60.42%	93.60%	80.07%	94.53%	85.94%	82.25%	84.43%	89.51%	84.87%	48.18%	64.51%	88.78%	54.33%	91.04%	67.86%	82.56%	73.20%	71.13%
2	72.33%	92.87%	80.45%	78.06%	91.70%	57.22%	90.45%	84.12%	91.43%	79.37%	89.97%	66.44%	75.10%	74.06%	85.46%	72.31%	94.40%	63.54%
3	90.06%	99.52%	70.39%	69.42%	97.48%	57.80%	98.60%	90.18%	94.87%	12.32%	96.86%	63.17%	23.75%	85.24%	22.72%	85.57%	60.13%	76.51%
4	61.40%	89.24%	69.31%	85.04%	23.34%	73.33%	23.84%	89.96%	**0.00%**	23.26%	99.20%	74.16%	21.61%	59.79%	15.39%	74.93%	69.88%	82.39%
5	67.01%	61.50%	81.82%	89.09%	36.30%	75.62%	37.45%	92.96%	**0.00%**	25.70%	99.03%	81.66%	38.60%	89.00%	27.19%	95.47%	60.08%	86.64%
6	58.61%	50.13%	84.88%	90.49%	52.72%	79.27%	49.05%	83.56%	**0.00%**	32.77%	99.74%	88.28%	44.38%	61.23%	35.98%	44.11%	75.88%	47.27%
7	63.32%	44.00%	66.44%	89.76%	**4.89%**	87.42%	6.93%	87.33%	**0.00%**	**2.29%**	99.56%	84.87%	55.24%	73.40%	39.79%	21.02%	86.10%	25.93%
8	76.77%	18.56%	60.47%	80.39%	6.98%	50.84%	8.02%	62.50%	**0.00%**	**4.73%**	84.59%	86.79%	66.05%	70.79%	52.08%	15.48%	94.88%	17.22%
9	81.68%	11.79%	63.43%	78.34%	5.57%	67.14%	30.61%	77.09%	**0.00%**	**4.60%**	91.31%	80.80%	61.49%	37.45%	22.33%	**4.12%**	76.38%	15.44%
10	50.46%	56.95%	12.35%	56.79%	**0.29%**	73.12%	23.74%	47.27%	**0.00%**	**3.96%**	93.60%	80.55%	56.10%	34.09%	45.49%	**2.44%**	88.79%	**2.58%**
11	68.28%	**3.07%**	18.74%	78.43%	**0.81%**	77.57%	34.01%	60.21%	**0.00%**	**2.22%**	94.93%	80.80%	71.17%	22.90%	58.18%	**4.39%**	75.17%	**2.99%**
12	63.92%	10.25%	19.66%	71.46%	**1.27%**	51.45%	25.54%	73.85%	**0.00%**	**0.00%**	96.40%	19.41%	74.18%	39.01%	60.24%	18.54%	51.05%	5.74%

Table 2.14 The Results of the Granger Causality Tests [X=Sugar, Coffee and Tea, weight=4.02%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	18.83%	33.16%	17.94%	73.33%	16.55%	98.81%	12.11%	26.04%	67.74%	78.70%	**0.00%**	60.85%	**0.26%**	5.47%	**0.66%**	7.61%	**1.05%**	7.62%
2	5.83%	34.17%	**0.04%**	79.70%	**1.50%**	94.44%	**1.01%**	30.44%	87.02%	94.08%	**0.00%**	74.34%	**1.02%**	14.66%	**1.71%**	26.21%	**2.93%**	24.52%
3	5.79%	17.49%	**0.17%**	88.81%	5.27%	45.23%	**3.62%**	49.98%	21.22%	82.58%	**0.00%**	39.74%	**3.36%**	23.42%	**4.12%**	43.23%	9.88%	35.24%
4	11.79%	12.16%	**0.51%**	62.80%	8.23%	66.10%	**3.14%**	18.48%	31.93%	91.88%	**0.00%**	10.55%	**0.09%**	13.76%	**0.90%**	24.79%	8.37%	18.65%
5	26.90%	14.92%	**1.09%**	24.85%	14.26%	77.76%	**1.26%**	8.58%	37.58%	94.30%	**0.00%**	7.42%	**0.09%**	12.96%	**0.73%**	8.65%	9.89%	23.15%
6	17.46%	17.33%	**1.40%**	26.05%	20.14%	66.61%	**3.71%**	14.25%	26.76%	92.78%	**0.00%**	81.55%	**0.23%**	30.22%	**1.23%**	32.42%	22.13%	37.55%
7	15.42%	15.01%	**1.22%**	12.68%	25.91%	56.58%	5.21%	16.26%	34.10%	94.87%	**1.66%**	12.11%	**0.15%**	26.58%	**2.87%**	52.44%	34.97%	26.30%
8	11.51%	35.68%	**1.99%**	20.22%	23.37%	69.84%	5.45%	27.16%	48.18%	97.49%	**1.32%**	6.12%	**0.37%**	30.90%	**2.48%**	19.85%	56.77%	28.96%
9	**2.53%**	34.23%	**2.84%**	23.57%	31.02%	73.07%	16.49%	44.85%	69.09%	88.49%	**2.88%**	8.97%	**1.30%**	36.55%	8.14%	33.33%	68.37%	12.95%
10	**1.05%**	83.11%	**3.04%**	41.60%	32.63%	67.32%	23.44%	57.71%	77.93%	92.05%	**1.38%**	18.11%	**1.00%**	46.28%	**3.82%**	25.19%	9.69%	27.61%
11	**3.99%**	88.25%	5.14%	48.11%	40.48%	69.47%	38.57%	73.45%	87.57%	84.96%	**3.08%**	18.11%	5.70%	29.63%	**2.41%**	30.40%	15.10%	47.08%
12	8.57%	95.22%	7.14%	54.60%	52.21%	75.25%	38.88%	22.49%	93.64%	**0.01%**	7.06%	20.86%	9.65%	57.01%	**4.91%**	59.95%	6.73%	37.34%

Table 2.15 The Results of the Granger Causality Tests [X=Tobacco, weight=1.67%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	43.69%	61.59%	17.62%	26.15%	47.43%	85.76%	65.52%	81.82%	49.53%	74.74%	85.24%	54.18%	82.07%	76.08%	80.70%	82.56%	74.12%	62.50%
2	9.16%	38.51%	**1.89%**	19.91%	76.08%	39.54%	88.73%	32.66%	55.27%	90.91%	29.11%	41.02%	14.16%	19.07%	22.95%	18.49%	73.24%	20.29%
3	**3.42%**	36.70%	5.18%	24.12%	42.73%	40.19%	34.89%	42.95%	71.58%	51.47%	47.64%	25.76%	26.50%	**3.32%**	39.22%	**4.47%**	89.19%	**2.90%**
4	7.69%	18.77%	12.00%	35.75%	56.18%	44.92%	45.59%	35.63%	85.71%	50.81%	24.91%	27.13%	11.87%	13.04%	35.10%	15.06%	78.63%	7.26%
5	14.35%	34.61%	18.34%	51.94%	49.25%	42.27%	**2.46%**	21.83%	93.92%	**1.51%**	26.77%	36.73%	18.92%	34.26%	51.78%	36.85%	89.54%	15.44%
6	18.90%	27.22%	32.72%	27.41%	67.46%	38.43%	6.69%	26.28%	92.49%	**2.50%**	26.84%	35.84%	27.08%	71.39%	47.13%	82.60%	92.13%	29.60%
7	22.98%	9.20%	5.13%	40.68%	44.79%	47.14%	14.83%	32.11%	91.77%	**4.65%**	35.09%	49.52%	29.04%	64.98%	56.70%	82.75%	96.97%	35.16%
8	41.82%	12.22%	6.54%	41.55%	50.14%	59.47%	17.33%	32.35%	95.49%	8.25%	47.06%	58.26%	42.88%	75.19%	53.61%	92.37%	78.41%	53.14%
9	56.17%	6.11%	13.76%	20.28%	57.14%	64.07%	26.03%	46.99%	95.81%	16.96%	61.08%	69.45%	48.62%	41.34%	65.15%	94.88%	90.75%	66.40%
10	90.63%	**0.95%**	22.47%	20.17%	70.12%	31.55%	43.92%	58.90%	91.73%	29.41%	79.73%	72.48%	60.69%	17.26%	64.09%	50.19%	47.72%	70.30%
11	94.12%	**0.45%**	37.86%	35.91%	70.51%	41.89%	45.33%	52.48%	95.92%	28.91%	80.54%	33.81%	39.95%	33.16%	74.76%	67.57%	62.26%	63.26%
12	86.01%	**0.47%**	60.88%	45.82%	71.03%	46.26%	59.70%	16.56%	96.66%	92.70%	7.85%	71.05%	57.32%	51.06%	13.62%	65.24%	53.94%	71.47%

Table 2.16 The Results of the Granger Causality Tests [X=Transportation and Communication, weight=5.16%]

Lags	MB		M1		M2		M3		CRG		USD		DM		GRD		ITL	
	MB to P	P to MB	M1 to P	P to M1	M2 to P	P to M2	M3 to P	P to M3	CRG to P	P to CRG	USD to P	P to USD	DM to P	P to DM	GRD to P	P to GRD	ITL to P	P to ITL
1	49.15%	77.11%	62.43%	94.86%	48.82%	40.09%	20.58%	5.91%	69.28%	85.87%	54.97%	16.03%	29.57%	20.08%	36.54%	11.26%	37.59%	**3.21%**
2	78.15%	64.89%	30.28%	61.99%	58.37%	92.66%	47.97%	99.18%	22.86%	81.76%	90.15%	41.04%	6.82%	19.15%	6.69%	8.72%	**4.78%**	9.02%
3	91.36%	90.80%	17.37%	30.73%	25.76%	68.99%	53.17%	98.84%	33.96%	98.63%	92.83%	37.87%	13.50%	38.15%	5.62%	20.16%	**1.55%**	16.42%
4	69.67%	99.74%	49.68%	20.39%	22.38%	**0.84%**	46.16%	25.27%	**0.02%**	99.97%	44.02%	52.41%	9.18%	24.91%	**4.91%**	28.79%	**3.20%**	27.54%
5	18.94%	94.24%	48.06%	21.84%	8.50%	**2.12%**	45.91%	51.61%	**0.00%**	100.0%	15.04%	55.49%	11.80%	61.60%	5.47%	63.46%	6.62%	55.47%
6	30.93%	93.83%	46.44%	35.62%	14.68%	47.01%	58.63%	87.68%	**0.02%**	99.95%	**0.00%**	54.08%	21.13%	63.83%	12.22%	73.90%	12.51%	74.64%
7	43.99%	80.71%	59.38%	19.56%	7.05%	19.88%	64.85%	24.46%	**0.07%**	98.30%	**0.00%**	87.21%	9.49%	75.99%	**4.58%**	57.11%	23.61%	68.78%
8	46.16%	11.23%	24.07%	29.68%	**3.06%**	28.80%	45.51%	43.01%	**0.26%**	95.46%	**0.00%**	67.79%	9.59%	77.03%	**4.21%**	36.66%	14.94%	18.78%
9	54.58%	11.67%	27.08%	25.55%	6.10%	50.11%	39.17%	73.77%	**0.73%**	81.00%	**0.00%**	41.85%	8.06%	76.19%	**4.01%**	59.83%	18.48%	26.25%
10	42.55%	64.89%	47.33%	34.72%	12.82%	34.27%	53.60%	43.32%	**0.33%**	**0.01%**	**0.00%**	31.46%	6.19%	49.87%	11.30%	36.62%	12.60%	28.51%
11	55.76%	75.81%	63.95%	13.91%	18.69%	27.45%	68.08%	13.24%	**1.12%**	**0.00%**	**0.00%**	39.36%	8.83%	72.27%	16.99%	43.04%	22.35%	26.86%
12	76.94%	78.83%	30.50%	47.44%	31.45%	74.98%	54.24%	62.69%	6.14%	**0.03%**	7.64%	18.90%	25.91%	40.58%	14.46%	27.85%	30.22%	38.05%

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